Advant® OCS
with Master software

Data Base Elements
Advant® Controller 55

Reference Manual

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CAUTION	Hazards which could result in equipment or property damage
NOTE	Alerts user to pertinent facts and conditions

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Introduction

This chapter is an introduction to data sheets for data base elements in Advant Controller 55.

Overview

Advant Controller 55 is a Programmable Logic Controller (PLC) and Remote Terminal Unit (RTU) system for industrial processes. The system provides a PC programming language and a data base element concept.

The data base elements provide a software concept for the representation of:

- The module and signals of
  - The Basic Unit
  - The Expansion Units
- The common data (DAT/PARDAT)
- The transfer of common data from/to other targets via MVI Data Blocks (MVB)
- The transfer of event data via Event Set Send (EVS(S))

In Advant Controller 55 there is a common data area within the target system for the DAT and PARDAT data base elements. There are a common data extended area and a common data event queue area for further internal data (see Table 3). Scan tasks read and write the other process values directly from/to the related I/O of the Basic Unit and Expansion Units.

The data base elements for Advant Controller 55 fulfil three main tasks:

1. They represent process signals, including error signals connectable to PC programs
2. They show configuration data for the initialization of I/O modules or common data area elements
3. They include descriptions belonging to the data base element (names, ..)

Data Sheets for Data Base Elements

This description contains the data sheets for all data base elements available for Advant Controller 55.

You can use the information in the data sheets for two purposes:

1. To interpret the meaning of the data viewed in element pictures on the Engineering Station.
2. To check available data types, values and ranges for your modifications of the element contents.

Contents of a Data Sheet for Data Base Elements

Head of the Data Sheet

The head of a data sheet shows in the upper right corner the call name(s) of the element(s) and in the upper left corner the data base element type.

Data Base Element Type

Call Name

Basic unit

CT481, CT482

Figure 1. Example of Head of the Data Sheet

Element Type

The element type gives a short description of the data base element. For data base elements of type unit or signal the first two characters correspond to the first two characters of the hardware ID.

Call Name

The call name of a data base element describing units and signals corresponds to the ID of the related units (for example CT481). For other elements the call name is equal to the element name or is a short mnemonic of the element name.

On an Engineering Station you create a data base element instance by entering the element’s call name. Note that some elements are automatically created with others. Their call names can not be used for creation.

Summary

The summary provides a brief description of the element(s).

The CT481 and CT482 elements represents the basic units of an Advant Controller 55. The hardware of both units differs in the digital inputs process voltage of 24 Volt resp. 48 Volt.

By means of the call name CT481 resp. CT482 an Engineering Station will create:

- 1 data base element of type Basic unit CT481 resp. CT482
- 16 data base elements of type Digital Input DIS481 resp. DIS482
- 8 data base elements of type Digital Output DOS481 resp. DOS482
- 8 data base elements of type Analog Input AIS481 resp. AIS482
- 2 data base elements of type Analog Output AOS481 resp. AOS482

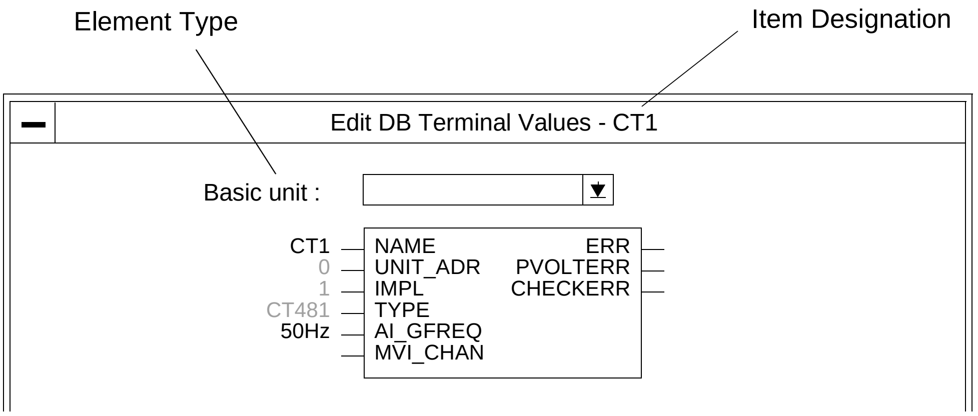
Figure 2. Example of Summary

Picture

The picture shows the element in the same way as it is displayed on the Engineering Station.

The symbol on the top middle of the display shows the header part with the element type. A graphic symbol that looks like a PC element is shown below it.

Simple data base elements consist of one single graphic symbol, whereas more complex elements are split into several graphic symbols. Each symbol has a name that is listed in the header part and the symbol shown below it corresponds to the currently selected name. The data sheet of data base elements with more than one symbol start with an overview picture including all symbols. This overview picture cannot be displayed on the Engineering Station.



Edit DB Terminal Values - CT1

Basic unit :

CT1	NAME	ERR
0	UNIT_ADR	PVOLTERR
1	IMPL	CHECKERR
CT481	TYPE	
50Hz	AI_GFREQ	
	MVI_CHAN	

Figure 3. Example of Head

In Advant Controller 55 the graphic symbol of a data base element has the following general representation:

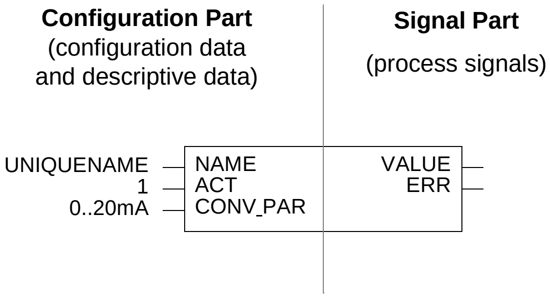


Figure 4. General Representation

Graphic Symbol

The graphic symbol is a box with terminals representing each data value. Configuration and descriptive data are shown to the left, process signals to the right. The names inside the picture are terminal names to identify the data. They are used for connections of PC elements to data base elements. VALUE is the default name when connecting. The configuration and description data is entered outside the box at the terminal names.

Item Designation

Each element is created with a unique item designation that is used to identify it. For some elements the item designation equals to the call name plus a consecutive number. For other elements a common type of item designations is used. Normally a group of similar elements will have the same type of item designation. For instance the data base element with item designation AIx.y corresponds to the y:th analog input signal of the x:th Analog Input unit.

Terminal Description

The terminal description table presents detailed information concerning the properties of each data base element terminal.

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	CTx	–	Unique unit **NAME.**	Max. 20 characters.
UNIT_ADR	predef	0	–	**AD**d**R**ess of the **UNIT**.	–
IMPL	predef	1	–	**IMPL**emented.	–
TYPE	predef	CT481/ CT482	–	Unit **TYPE**.	See call name.
AI_GFREQ	user	50Hz	–	**A**nalog **I**nput **G**rid**FREQ**uency suppression filter. Values: 50Hz, 60Hz	–
MVI_CHAN	user	*	–	Name of an **MVICHAN** element.	Not allowed to change on-line.
ERR	system	–	B(r)	**ERR**or. 0=no error 1=non functional unit	–
PVOLTERR	system	–	B(r)	**P**rocess **VOLT**age **ERR**or. 0=no process voltage error 1=process voltage error	–
CHECKERR	system	–	B(r)	**CHECK**sum **ERR**or on PROM. 0=no checksum error 1=checksum error	–

1 **2** **3** **4** **5** **6**

Figure 5. Example of Terminal Description

1. Terminal name.

   Each available property in the element has its own terminal with a terminal name.
   The terminal name is unique within the element.

2. Value entered by.

   This column describes whether it is up to you or the system to enter values on this terminal.

   user means that a user specified value usually should be entered by Engineering Station.

   system means that the value of this terminal is updated by the system.

   predef means that the value of this terminal has been predetermined and is already present in the system. A predefined value can not be changed by the user.

   PC means that a PC element is usually connected to this terminal.

3. Default value.

4. PC connection data type.

   If the PC programs can read (r)/write (w) in a data base terminal, its right to read (r) and/or write (w) and its data type is given as

B	for Boolean
I	for Integer (16 bits)
IL	for IntegerLong (32 bits)
R	for Real

5. Description.

   A short description of the terminal and a list of terminal values.

6. Remarks.

   Short notes about restrictions, limitations, ranges, etc.

NAME Terminal

All elements can be given a unique user name allowing a second identifying method.
The default user name for the element is the item designation.

UNIT_ADR Terminal

All data base module elements have to be given a unique address within its process station.
This address specifies the place of the unit.

For Advant Controller 55 the address consists of:

- UNIT_ADR, the unit address: 0 for basic unit, 1..4 for expansion units. The unit address is defined according to the physical availability of the units.

NOTE

This terminal can not be changed on-line.

	CT481	CX473	CX473	CX475	CX475
UNIT_ADR	0	1	2	3	4

Figure 6. Example of an Advant Controller 55 Process Station

IMPL, ACT Terminals

IMPL and ACT can be modified to determine the initialization
of a module or signal after next download of configuration data.

IMPL=0	means the module (and its signals) is spare and will not be initialized.
IMPL=1	means the module is implemented.
ACT =0	means the signal is spare and will not be activated after module initializing.
ACT =1	means the signal is active.

The initialization of modules and their signals will always be done after start-up of the Advant Controller 55 system or after on-line change of the data base element. The configuration values for the I/O modules are stored on the Advant Controller 55 Basic unit.

General Notes and Limitations

Name Limitations

Names of data base element instances may include most characters except space (   ). Generally the maximum length of a name is 20 characters, but some elements may have further restrictions stated in the list of terminals. If no name is specified during creation the name of a data base element instance is set according to the item designation rules, and it can be changed to a more significant one later.

Creation and Modification of Data Base Elements

Creation and modification of data base elements may be done only by means of an Engineering Station (for example Advant Station 120/125 Engineering Station).

Technical Description

The technical description of the Basic and Expansion Unit can be found in the manual *Advant Controller 55 Technical Description*.

List of Element Types and Call Names

The following table shows the relation between element types and call names.

Table 1. List of Element Types and Call Names

Data Base Element Type	Call Name(s)
AI Calculated	AIC
Analog Input (1)	AIS473, AIS475, AIS481, AIS482
Analog Output (1)	AOS473, AOS475, AOS481, AOS482
Basic unit	CT481, CT482
Boolean Data	DAT(B)
Boolean Param	PARDAT(B)
Boolean Value	PARDATS(NB)
DI Calculated	DIC
Digital Input (1)	DIS473, DIS475, DIS481, DIS482
Digital Output (1)	DOS473, DOS475, DOS481, DOS482
Event Set (Send)	EVS(S)
Expansion unit	CX473, CX475
Integer Data	DAT(I)
Integer Param	PARDAT(I)
Integer Value	PARDATS(NI)
IntegerLong Data	DAT(IL)
IntegerLong Param	PARDAT(IL)
MVI Channel	MVICHAN
MVI Data Block	MVB
MVI Node	MVINODE
Packed Bool. Param	PARDAT(NB)
Packed Int. Param	PARDAT(II), PARDAT(NI)
Packed Integer Data	DAT(II)
Real Data	DAT(R)
Real Param	PARDAT(R)

(1) Element type which can not be created directly.

References between data base elements:

EVS(S) —— *unique* ——> AIC, DIC
MVB —— *multiple* ——> DAT(B), DAT(I), DAT(II), DAT(IL), DAT(R)
CT481, CT482 —— *unique* ——> MVICHAN

“*multiple*” means that multiple references to one instance can be defined,
“*unique*” means that the element’s instance can be referenced only once.

Memory Requirements

The different memory requirements with respect to the connected terminals for the data base elements in Advant Controller 55 are listed in the following tables:

(n = number of connections to signal terminals of the same unit)

Table 2. Memory Requirements for Data Base Elements, Units and Signals

Call Name and Terminals	Config. data (bytes)	Common data descr. (bytes)	Common data (bytes)	Common data extended (bytes)	Additional system data (bytes)	Input connect. (GET) (bytes)	Output connect. (PUT) (bytes)
CT481, CT482	460	–	–	–	–		
PVOLTERR	–	–	–	–	–	8 + 4 × n	–
CHKERR	–	–	–	–	–	8 + 4 × n	–
ERR	–	–	–	–	–	8 + 4 × n	–
CX473, CX475	454	–	–	–	–		
PVOLTERR	–	–	–	–	–	8 + 4 × n	–
ERR	–	–	–	–	–	8 + 4 × n	–
AIS473, AIS475,							
AIS481, AIS482	–	–	–	–	–		
VALUE only	–	–	–	–	–	10 + 4 × n	–
ERR, VALUE	–	–	–	–	–	10 + 8 × n	–
VALUE>H2	–	–	–	–	–	10 + 4 × n	–
VALUE>H1	–	–	–	–	–	10 + 4 × n	–
VALUE<L1	–	–	–	–	–	10 + 4 × n	–
VALUE<L2	–	–	–	–	–	10 + 4 × n	–
AOS473, AOS475,							
AOS481, AOS482	–	–	–	–	–		
VALUE only	–	–	–	–	–	10 + 4 × n	10 + 4 × n
ERR, VALUE	–	–	–	–	–	10 + 8 × n	–
DIS473, DIS475,							
DIS481, DIS482	–	–	–	–	–		
VALUE only	–	–	–	–	–	10 + 4 × n	–
ERR, VALUE	–	–	–	–	–	10 + 8 × n	–
DOS473, DOS475,							
DOS481, DOS482	–	–	–	–	–		
VALUE only	–	–	–	–	–	10 + 4 × n	10 + 4 × n
ERR, VALUE	–	–	–	–	–	10 + 8 × n	–

Table 3. Memory Requirements for Data Base Elements, Common Data

Call Name and Terminals	Config. data (bytes)	Common data descr. (bytes)	Common data (bytes)	Additional system data (bytes)	Input connect. (GET) (bytes)	Output connect. (PUT) (bytes)
DAT(B)	–	–	6	–		
VALID	–	–	–	–	4	–
VALUE,						
VALUE2, .., VALUE32	–	–	–	–	4 each	4 each

Table 3. Memory Requirements for Data Base Elements, Common Data (Continued)

Call Name and Terminals	**Config. data (bytes)**	**Common data descr. (bytes)**	**Common data (bytes)**	**Additional system data (bytes)**	**Input con–nect. (GET) (bytes)**	**Output con–nect. (PUT) (bytes)**
DAT(I)	–	–	4	–		
VALID	–	–	–	–	4	–
VALUE	–	–	–	–	4	4
DAT(II)	–	–	4	–		
VALID	–	–	–	–	4	–
VALUE	–	–	–	–	4	4
VALUE2	–	–	–	–	4	4
DAT(IL)	–	–	6	–		
VALID	–	–	–	–	4	–
VALUE	–	–	–	–	4	4
DAT(R)	–	–	6	–		
VALID	–	–	–	–	4	–
VALUE	–	–	–	–	4	4
PARDAT(B)	–	6	6	–		–
VALUE, VALUE2, .., VALUE 32	–	–	–	–	4 each	4 each
PARDAT(I)	–	4	4	–		
VALUE	–	–	–	–	4	4
PARDAT(II)	–	6	6	–		–
VALUE	–	–	–	–	4	4
VALUE2	–	–	–	–	4	4
PARDAT(IL)	–	6	6	–		
VALUE	–	–	–	–	4	4
PARDAT(NI)	–	4	4	–		
VALUE	–	–	–	–	4	4
PARDAT(R)	–	6	6	–		
VALUE	–	–	–	–	4	4

Table 4. Memory Requirements for Data Base Elements, Event Handling

Call Name and Terminals	Common data descr. (bytes)	Common data exten–ded (bytes)	Additional system data (bytes)	Input con–nect. (GET) (bytes)	Output con–nect. (PUT) (bytes)
AIC	48	44	–		
ERR	–	–	–	4	4
NORM_TR	–	–	–	4	–
ERR	–	–	–	4	4
VALUE	–	–	–	4	4
EN_HI2	–	–	–	4	4
HI_LIM2	–	–	–	4	4
EN_HI1	–	–	–	4	4
HI_LIM1	–	–	–	4	4
EN_LO1	–	–	–	4	4
LO_LIM1	–	–	–	4	4
EN_LO2	–	–	–	4	4
LO_LIM2	–	–	–	4	4
HYST	–	–	–	4	4
DIC	26	16	–		
NORM_TR	–	–	–	4	4
ERR	–	–	–	4	–
VALUE	–	–	–	4	4
EVS(S)	46	172	3328/9728 (1)		
CLEAR_Q	–	–	–	4	4
Q_EMPTY	–	–	–	4	–
WARNING	–	–	–	4	–
ERR	–	–	–	4	–

(1) QUEUE=NORMAL/QUEUE=EXTENDED

Table 5. Memory Requirements for Data Base Elements, RCOM

Call Name and Terminals	Config. data (bytes)	Common data descr. (bytes)	Common data extended (bytes)	Additional system data (bytes)	Input con–nect. (GET) (bytes)	Output con–nect. (PUT) (bytes)
MVB	36	62 + 4 x r (1)	24	6		
BLOCKED		–	–	–	4	4
EXECUTE		–	–	–	4	4
EXECDONE		–	–	–	4	–
VALID		–	–	–	4	4
ERR		–		–	4	–
MVICHAN	78	16	130	18	10	
ERR		–	–	–	4	–
DSR		–	–	–	4	–
DCD		–	–	–	4	–
CTS		–	–	–	4	–
RI		–	–	–	4	–
CTRLERR		–	–	–	4	–

Table 5. Memory Requirements for Data Base Elements, RCOM

Call Name and Terminals	**Config. data (bytes)**	**Common data descr. (bytes)**	**Common data extended (bytes)**	**Additional system data (bytes)**	**Input con–nect. (GET) (bytes)**	**Output con–nect. (PUT) (bytes)**
MVINODE	176	14	20	6	10	
STATUS1		–	–	–	4	–
STATUS2		–	–	–	4	–
STATUS3		–	–	–	4	–
ERR		–	–	–	4	–

(1) r = number of connections

Execution Times of GET and PUT Elements

The following execution time table is valid for connections from PC element terminals to the specified data base element terminal. The resulting execution time has to be added to the runtime of the control module.

If, for a unit, no ”signal:ERR” is accessed from a control module, use the formula given at ”signal:VALUE”; n is the no of signals used.

If, for a unit, at least one ”signal:ERR” is accessed from a control module, use the formula given at ”signal:ERR+VALUE”; n is the no of signals used.

n = number of connections to the same unit

Table 6. Execution Times for Data Base Elements, Units and Signals

Call Name and Terminals	**Connection to a PC element**	
	Input terminal GET element (μs)	**Output terminal PUT element (μs)**
CT481, CT482		
unit:PVOLTERR	$8 + n \times 6.5$	–
unit:CHKERR		–
unit:ERR		–
AI signal:VALUE	$7 + n \times 8$	–
AI signal:ERR+VALUE	$9 + n \times 10$	–
AI signal:VALUE>H2	$7 + n \times 5$	–
AI signal:VALUE>H1	$7 + n \times 5$	–
AI signal:VALUE<L1	$7 + n \times 5$	–
AI signal:VALUE<L2	$7 + n \times 5$	–
AO signal:VALUE	$7 + n \times 8$	$7 + n \times 4.5$
AO signal:ERR+VALUE	$9 + n \times 10$	$16 + n \times 14.5$
DI signal:VALUE	$7 + n \times 5$	–
DI signal:ERR+VALUE	$11 + n \times 9$	–
DO signal:VALUE	$7 + n \times 5$	$9 + n \times 6$
DO signal:ERR+VALUE	$11 + n \times 9$	$20 + n \times 15$
CX473, CX475		
unit:PVOLTERR	$8 + n \times 6.5$	–
unit:ERR		–
AI signal:VALUE	$7 + n \times 8$	–
AI signal:ERR+VALUE	$9 + n \times 10$	–
AI signal:VALUE>H2	$7 + n \times 5$	–
AI signal:VALUE>H1	$7 + n \times 5$	–
AI signal:VALUE<L1	$7 + n \times 5$	–
AI signal:VALUE<L2	$7 + n \times 5$	–
AO signal:VALUE	$7 + n \times 8$	$7 + n \times 4.5$
AO signal:ERR+VALUE	$9 + n \times 10$	$16 + n \times 14.5$
DI signal:VALUE	$7 + n \times 5$	–
DI signal:ERR+VALUE	$11 + n \times 9$	–
DO signal:VALUE	$7 + n \times 5$	$9 + n \times 6$
DO signal:ERR+VALUE	$11 + n \times 9$	$20 + n \times 15$

Table 7. Execution Times for Data Base Elements, Common Data

Name	Connection to a PC element	
	Input terminal GET element (µs)	**Output terminal PUT element (µs)**
DAT(B)	–	–
VALID	5	–
VALUE	5	5
VALUE2 to VALUE32	5 each	5 each
DAT(I)	–	–
VALID	5	–
VALUE	5	5
DAT(II)	–	–
VALID	5	–
VALUE	5	5
VALUE2	5	5
DAT(IL)	–	–
VALID	5	–
VALUE	5	5
DAT(R)	–	–
VALID	5	–
VALUE	5	5
PARDAT(B)	–	–
VALUE	5	5
VALUE2 to VALUE3	5 each	5 each
PARDAT(I)	–	–
VALUE	5	5
PARDAT(II)	–	–
VALUE	5	5
VALUE2	5	5
PARDAT(IL)	–	–
VALUE	5	5
PARDAT(NI)	–	–
VALUE	5	5
PARDAT(R)	–	–
VALUE	5	5

Table 8. Execution Times for Data Base Elements, Event Handling and RCOM

Name	**Connection to a PC element**	
	Input terminal GET element (µs)	**Output terminal PUT element (µs)**
AIC	–	–
NORM_TR	5	5
ERR	5	–
VALUE	5	5
EN_HI2	5	5
HI_LIM2	5	5
EN_HI1	5	5
HI_LIM1	5	5
EN_LO1	5	5
LO_LIM1	5	5
EN_LO2	5	5
LO_LIM2	5	5
HYST	5	5
DIC	–	–
NORM_TR	5	5
VALUE	5	5
ERR	5	–
EVS(S)	–	–
CLEAR_Q	5	5
Q_EMPTY	5	–
WARNING	5	–
ERR	5	–
MVB	–	–
BLOCKED	5	5
EXECUTE	5	5
EXECDONE	5	–
VALID	5	5
ERR	5	–
MVICHAN	180	–
MVINODE	150	–

Execution Time of Event Detection

The data base elements AI Calculated (AIC) and DI Calculated (DIC) are used for event detection by connecting a PC signal to their VALUE terminals.

There is a system function assigned to each of the above data base elements that executes event detection. The execution times are listed in the following table:

Table 9. Execution of Event Detection Functions

Call Name	**Execution Time (µs)**
AIC	2 500
DIC	800

Data Base Elements Listed in Functional Groups

UNITS AND SIGNALS

Basic unit

CT481, CT482 .... *Basic unit* 25

Expansion unit

CX473, CX475 .... *Expansion unit* 27

Process I/O

Analog Input

AIS473, AIS475, AIS481, AIS482 .... *Analog Input* 22

Analog Output

AOS473, AOS475, AOS481, AOS482 .... *Analog Input* 24

Digital Input

DIS473, DIS475, DIS481, DIS482 .... *Digital Input* 37

Digital Output

DOS473, DOS475, DOS481, DOS482 .... *Digital Input* 38

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Event

AIC .... *AI Calculated* 19

DIC .... *DI Calculated* 35

Event Set

EVS(S) .... *Event Set (Send)* 39

RCOM

MVB .... *MVI Data Block* 42

MVICHAN .... *MVI Channel* 47

MVINODE .... *MVI Node* 52

COMMON DATA

DAT(B) .... *Boolean Data* 28

DAT(I) .... *Integer Data* 31

DAT(II) .... *Packed Integer Data* 32

DAT(IL) .... *IntegerLong Data* 33

Data Base Elements Listed in Functional Groups (Continued)

DAT(R).. *Real Data* 34
PARDAT(B) .... *Boolean Param* 54
PARDAT(I)... *Integer Param* 57
PARDAT(II).. *Packed Int. Param* 58
PARDAT(IL)... *IntegerLong Param* 59
PARDAT(NB)... *Packed Bool. Param* 60
PARDAT(NI) .... *Packed Int. Param* 61
PARDAT(R) .... *Real Param*................................... 62
PARDATS(NB) .... *Boolean Param* 63
PARDATS(NI).. *Integer Param* 64

AI Calculated AIC

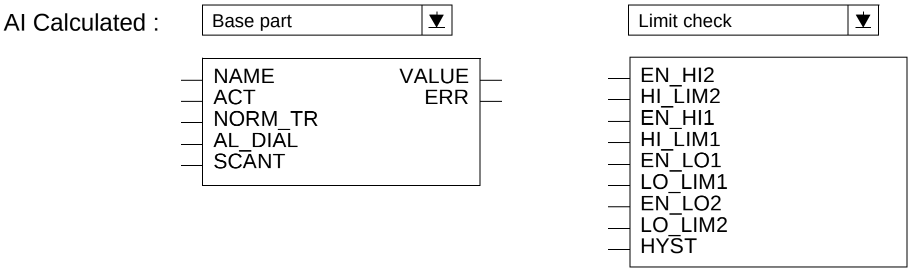
Summary

The AI Calculated element is an event channel element used for detection of calculated analog events.

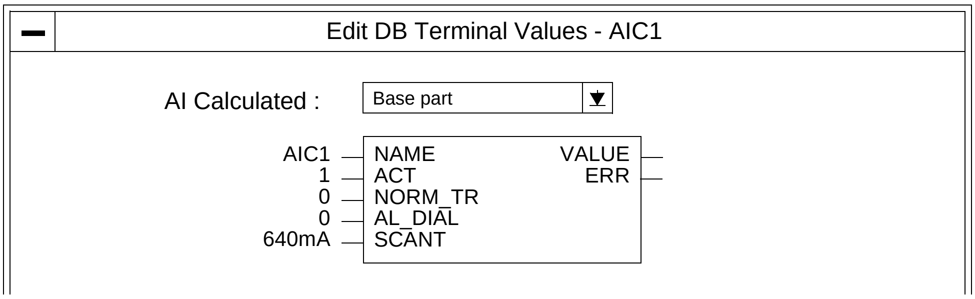
An event is detected when the real value (terminal VALUE) exceeds one of the two high or low limits or moves back into the range.

The hysteresis parameter (terminal HYST) can be used to suppress event generation if the value is fluctuating around a limit.

Overview



Base part



AIC1 — NAME
1 — ACT
0 — NORM_TR
0 — AL_DIAL
640mA — SCANT

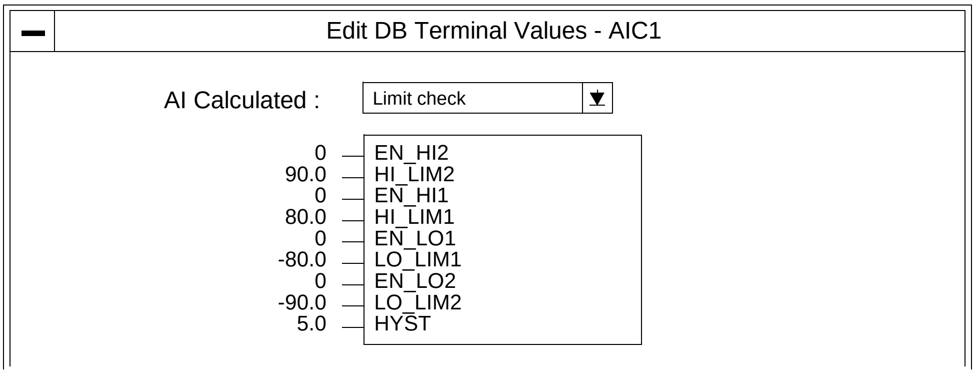
Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	AICx	–	Unique **NAME** of the event channel.	Max. 20 characters.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	Element must be referenced by an EVS(S) when ACT=1.

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NORM_TR	user/PC	0	B(r/w)	**NORM**al **TR**eatment. 0=event detection disabled 1=event detection enabled	Not allowed to change on-line.
AL_DIAL	user	0	–	**DIAL** the master on **AL**arm. 0=no dial on alarm 1=dial on alarm	RCOM only.
SCANT	user	640ms	–	**SCAN T**ime for event recording. Values: 10ms, 20ms, 40ms, 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 81920ms, 163840ms, 327680ms	–
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–
VALUE	PC	0	R(r/w)	Signal **VALUE** (is watched for events).	–

Limit check



AI Calculated : Limit check

0 EN_HI2
90.0 HI_LIM2
0 EN_HI1
80.0 HI_LIM1
0 EN_LO1
-80.0 LO_LIM1
0 EN_LO2
-90.0 LO_LIM2
5.0 HYST

Terminal Description, Limit check

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
EN_HI2	user/PC	0	B(r/w)	**EN**ables **HI**gh limit no. **2** for event generation. 0=disable 1=enable	Not allowed to change on-line.
HI_LIM2	user/PC	90.0	R(r/w)	**HI**gh **LIM**it no. **2** for event generation of VALUE.	Not allowed to change on-line.

Terminal Description, Limit check (Continued)

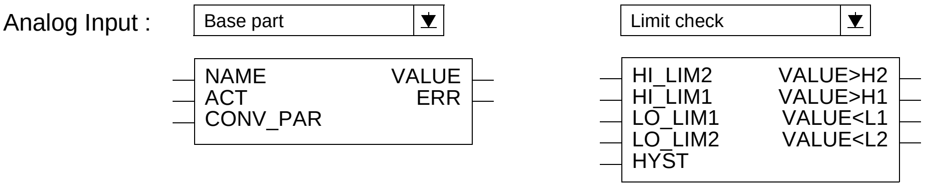
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
EN_HI1	user/PC	0	B(r/w)	**EN**ables **HI**gh limit no. **1** for event generation. 0=disable 1=enable	Not allowed to change on-line.
HI_LIM1	user/PC	80.0	R(r/w)	**HI**gh **LIM**it no. **1** for event generation of VALUE.	Not allowed to change on-line.
EN_LO1	user/PC	0	B(r/w)	**EN**ables **LO**w limit no. **1** for event generation. 0=disable 1=enable	Not allowed to change on-line.
LO_LIM1	user/PC	–80.0	R(r/w)	**LO**w **LIM**it no. **1** for event generation of VALUE.	Not allowed to change on-line.
EN_LO2	user/PC	0	B(r/w)	**EN**ables **LO**w limit no. **2** for event generation. 0=disable 1=enable	Not allowed to change on-line.
LO_LIM2	user/PC	–90.0	R(r/w)	**LO**w **LIM**it no. **2** for event generation of VALUE.	Not allowed to change on-line.
HYST	user/PC	5.0	R(r/w)	**HYST**eresis for limit check.	≥0.0 Not allowed to change on-line.

Analog Input AIS473, AIS475, AIS481, AIS482

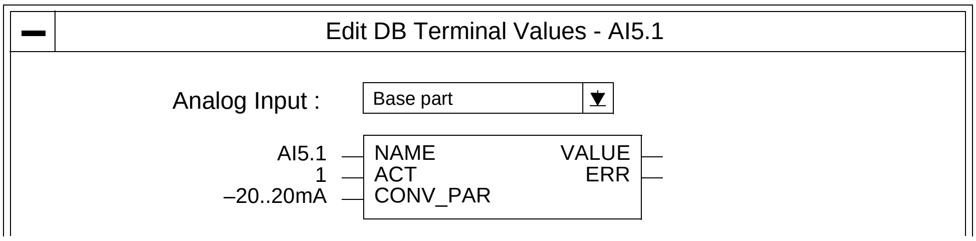
Summary

AIS473, AIS475, AIS481, and AIS482 represent analog input signals of an Advant Controller 55. AIS473 and AIS475 are subordinated to CX473 resp. CX475, whereas AIS481 and AIS482 are subordinated to CT481 resp. CT482.

Overview



Base part



AI5.1
1
–20..20mA

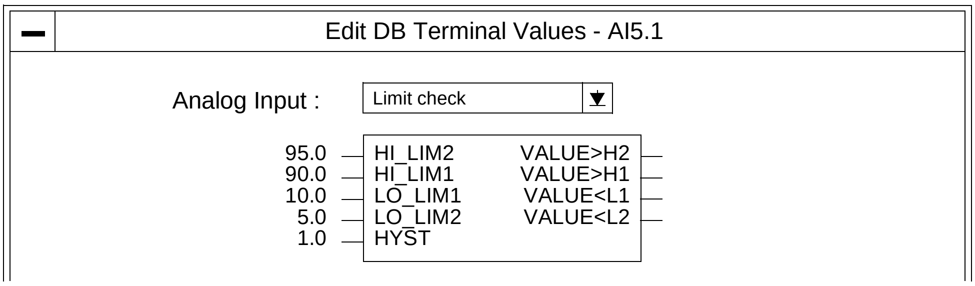
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AIx.y	–	Unique signal **NAME**.	Max. 20 characters.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
CONV_PAR	user	–20..20mA	–	The normal signal range can be entered as **CONV**ersion **PAR**ameter. Values: 4..20mA, –20..20mA, –10..10V	–
VALUE	system	–	R(r)	Process **VALUE** in percent.	0..100% resp. -100..100%

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware error, or signal out of range (incl. living zero)	–

Limit check



Edit DB Terminal Values - AI5.1

Analog Input : Limit check

95.0 HI_LIM2
90.0 HI_LIM1
10.0 LO_LIM1
5.0 LO_LIM2
1.0 HYST

Terminal Description, Limit check

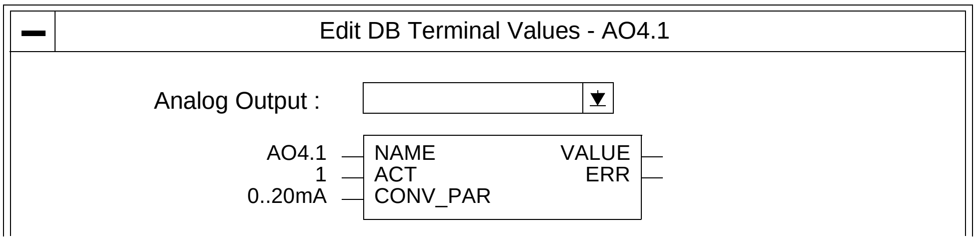
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
HI_LIM2	user	95.0	–	**HI**gh **LIM**it no. **2** (in percent).	(1)
VALUE>H2	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **2**.	–
HI_LIM1	user	90.0	–	**HI**gh **LIM**it no. **1** (in percent).	(1)
VALUE>H1	system	–	B(r)	1=**VALUE** has exceeded **H**igh Limit no. **1**.	–
LO_LIM1	user	10.0	–	**LO**w **LIM**it no. **1** (in percent).	(1)
VALUE<L1	system	–	B(r)	1=**VALUE** has exceeded **L**ow Limit no. **1**.	–
LO_LIM2	user	5.0	–	**LO**w **LIM**it no. **2** (in percent).	(1)
VALUE<L2	system	–	B(r)	1=**VALUE** has exceeded **L**ow Limit no. **2**.	–
HYST	user	1.0	–	**HYST**eresis for limit check (in percent).	–

(1) HI_LIM2 > HI_LIM1 > LO_LIM1 > LO_LIM2

Analog Output AOS473, AOS475, AOS481, AOS482

Summary

AOS473, AOS475, AOS481, and AOS482 represent analog output signals of an Advant Controller 55. AOS473 and AOS475 are subordinated to CX473 resp. CX475, whereas AOS481 and AOS482 are subordinated to CT481 resp. CT482.



Edit DB Terminal Values - AO4.1

Analog Output :

AO4.1 — NAME
1 — ACT
0..20mA — CONV_PAR

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	AOx.y	–	Unique signal **NAME**.	Max. 20 characters.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
CONV_PAR	user	0..20mA	–	The normal signal range can be entered as **CONV**ersion **PAR**ameter. Values: 0..20mA, 4..20mA	–
VALUE	system	–	R(r/w)	Process **VALUE** (in percent).	0..100%
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware error, or signal out of range	–

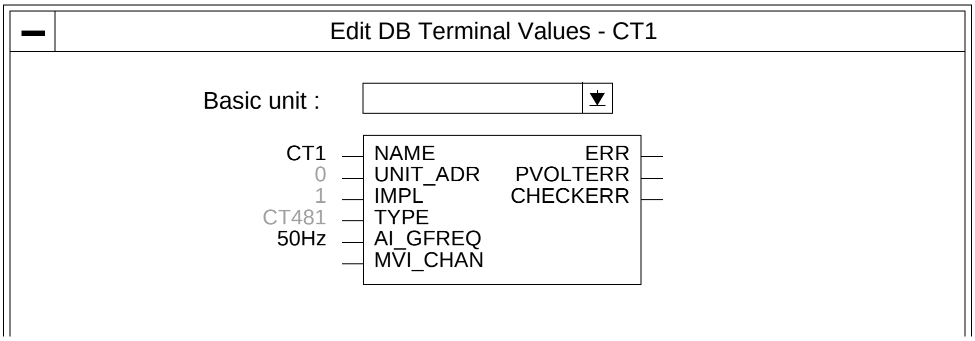
Basic unit CT481, CT482

Summary

The CT481 and CT482 elements represents the basic units of an Advant Controller 55. The hardware of both units differs in the digital inputs process voltage of 24 Volt resp. 48 Volt.

By means of the call name CT481 resp. CT482 the Engineering Station will create

- 1 data base element of type Basic unit CT481 resp. CT482
- 16 data base elements of type Digital Input DIS481 resp. DIS482
- 8 data base elements of type Digital Output DOS481 resp. DOS482
- 8 data base elements of type Analog Input AIS481 resp. AIS482
- 2 data base elements of type Analog Output AOS481 resp. AOS482



Edit DB Terminal Values - CT1

Basic unit :

CT1 — NAME ERR —
0 — UNIT_ADR PVOLTERR —
1 — IMPL CHECKERR —
CT481 — TYPE
50Hz — AI_GFREQ
— MVI_CHAN

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	CTx	–	Unique unit **NAME**.	Max. 20 characters.
UNIT_ADR	predef	0	–	**AD**d**R**ess of the **UNIT**.	–
IMPL	predef	1	–	0=the unit is spare 1=the unit is **IMPL**emented	–
TYPE	predef	CT481/ CT482	–	Unit **TYPE**.	See call name.
AI_GFREQ	user	50Hz	–	**A**nalog **I**nput **G**rid**FREQ**uency suppression filter. Values: 50Hz, 60Hz	–

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
MVI_CHAN	user	*	–	Name of an **MVICHAN** data base element.	Not allowed to change on-line.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional unit	–
PVOLTERR	system	–	B(r)	**P**rocess **VOLT**age **ERR**or. 0=no process voltage error 1=process voltage error	–
CHECKERR	system	–	B(r)	**CHECK**sum **ERR**or on PROM. 0=no checksum error 1=checksum error	–

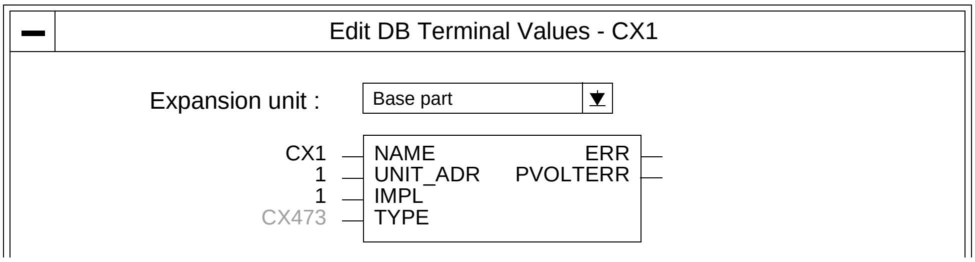
Expansion unit CX473, CX475

Summary

The CX473 and CX475 elements represents the expansion units of an Advant Controller 55. The hardware of both units differs in the digital inputs process voltage of 24 Volt resp. 48 Volt.

By means of the call name CX473 resp. CX475 the Engineering Station will create

- 1 data base element of type Expansion unit CX473 resp. CX475
- 16 data base elements of type Digital Input DIS473 resp. DIS475
- 8 data base elements of type Digital Output DOS473 resp. DOS475
- 8 data base elements of type Analog Input AIS473 resp. AIS475
- 2 data base elements of type Analog Output AOS473 resp. AOS475.



Edit DB Terminal Values - CX1

Expansion unit : Base part

CX1 — NAME ERR —
1 — UNIT_ADR PVOLTERR —
1 — IMPL
CX473 — TYPE

Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	CXx	–	Unique unit **NAME**.	Max. 20 characters.
UNIT_ADR	user	1	–	**AD**d**R**ess of the **UNIT**.	1..4
IMPL	user	1	–	0=the unit is spare 1=the unit is **IMPL**emented	–
TYPE	predef	CX473/ CX475	–	Unit **TYPE**.	See call name.
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=non functional unit	–
PVOLTERR	system	–	B(r)	**P**rocess **VOLT**age **ERR**or. 0=no process voltage error 1=process voltage error	–

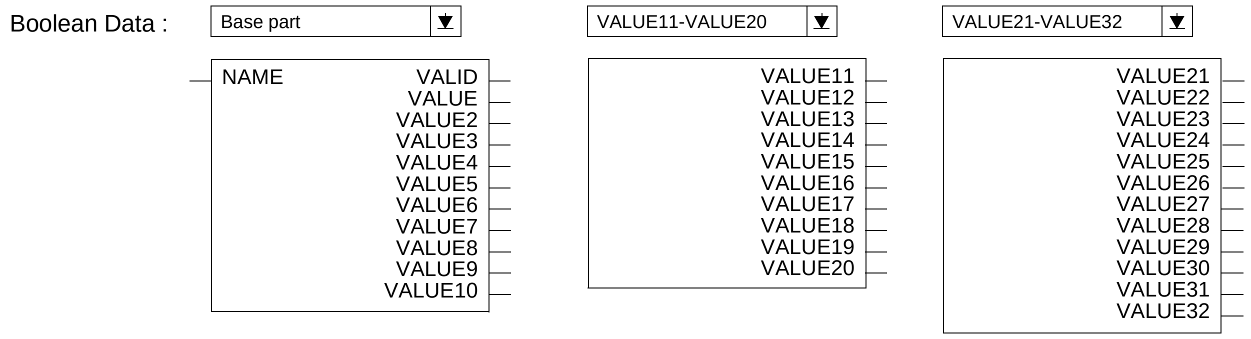
Boolean Data DAT(B)

Summary

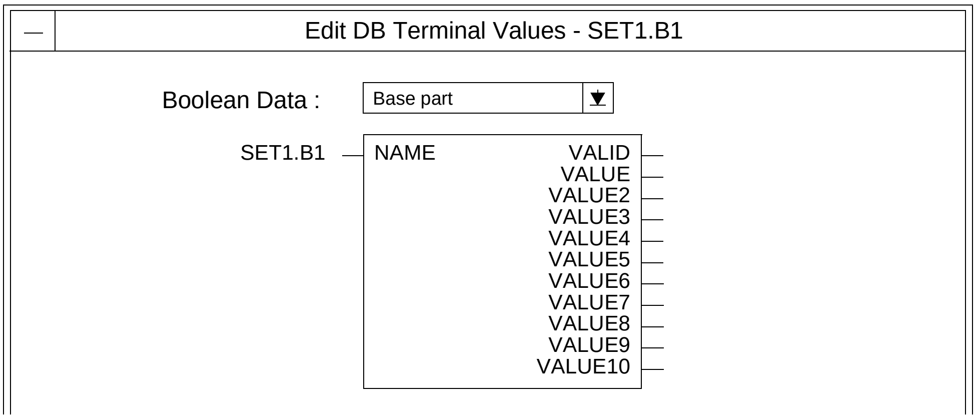
The DAT(B) data base element holds 32 packed boolean data values. The data values are given a name and a valid flag.

By means of the call name DAT(B) the Engineering Station will create 1 data base element of type Boolean Data.

Overview



Base part



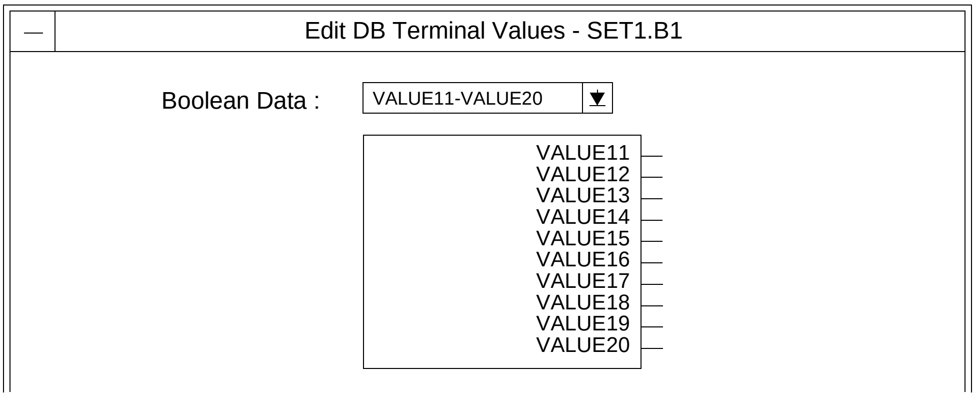
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	*	–	Unique element **NAME**. Default name from superior Data Set element. When created independently default name is DATx.	Max. 20 characters. Example if DSP is named SET1: SET1.B1

Terminal Description, Base part (Continued)

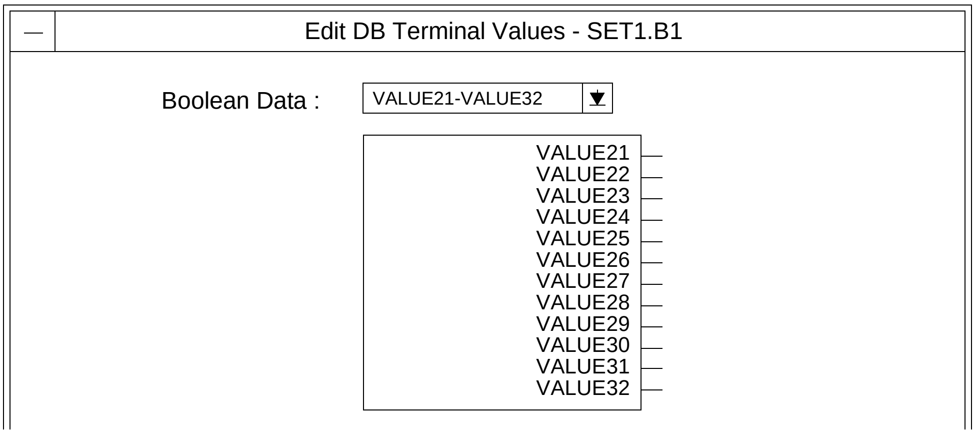
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
VALID	PC	0	B(r/w)	**VALID**. Can be set by PC element (or MMI, ..).	–
VALUE	system	–	B(r/w)	Boolean **VALUE**.	–
VALUE2	system	–	B(r/w)	Boolean **VALUE**.	–
: : VALUE10	system	–	B(r/w)	Boolean **VALUE**.	–

VALUE11-VALUE20



Boolean Data : VALUE11-VALUE20

VALUE21-VALUE32



Boolean Data : VALUE21-VALUE32

Terminal Description, VALUE11-VALUE32

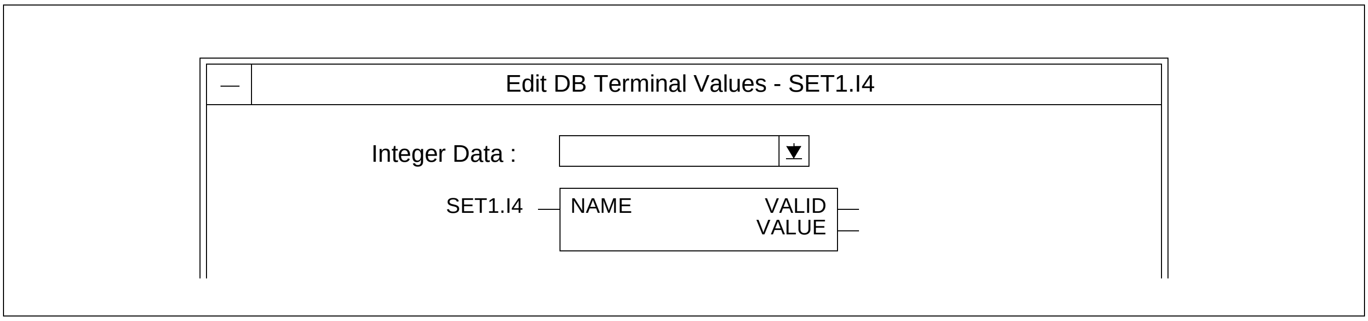
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
VALUE11	system	–	B(r/w)	Boolean **VALUE**.	–
VALUE12	system	–	B(r/w)	Boolean **VALUE**.	–
: : VALUE32	system	–	B(r/w)	Boolean **VALUE**.	–

Integer Data DAT(I)

Summary

The DAT(I) data base element holds one 16 bit integer data value. The data value is given a name and a valid flag.

By means of the call name DAT(I) the Engineering Station will create 1 data base element of type Integer Data.



Terminal Description

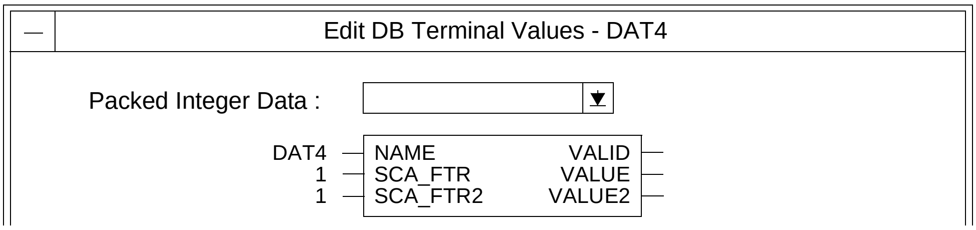
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	*	–	Unique element **NAME**. Default name from superior Data Set element. When created independently default name is DATx.	Max. 20 characters. Example if DSP is named SET1: SET1.I1
VALID	PC	0	B(r/w)	**VALID** flag. Can be set by PC element (or MMI).	–
VALUE	system	–	I(r/w)	**VALUE** of type Integer.	–

Packed Integer Data DAT(II)

Summary

The DAT(II) data base element holds two 16 bit integer values. The data values are given a name and a valid flag. The element can not be created automatically by a DSP.

By means of the call name DAT(II) the Engineering Station will create 1 data base element of type Packed Integer Data. .



Edit DB Terminal Values - DAT4

Packed Integer Data :

Terminal Description

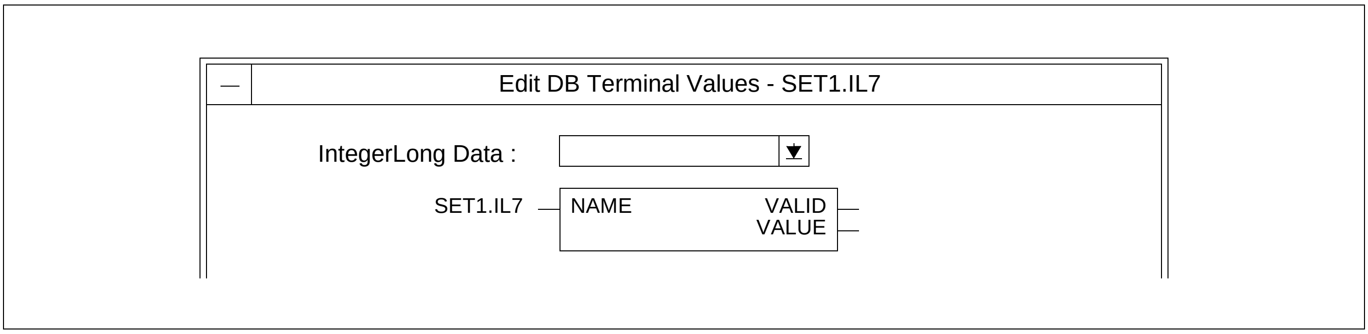
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DATx	–	Unique element **NAME**.	Max. 19 characters. One character (L or H) will be added for AdvaSoft.
SCA_FTR	user	1	–	**SCA**ling **F**ac**T**o**R** for VALUE. Allowed values: 0.001, 0.01, 0.1, 1, 10, 100, 1000.	–
SCA_FTR2	user	1	–	**SCA**ling **F**ac**T**o**R** for VALUE**2**. Allowed values: 0.001, 0.01, 0.1, 1, 10, 100, 1000.	–
VALID	PC	0	B(r/w)	**VALID** flag. Can be set by PC element (or MMI).	–
VALUE	system	–	I(r/w)	**VALUE** of type Integer.	–
VALUE2	system	–	I(r/w)	**VALUE** number **2** of type Integer.	–

IntegerLong Data DAT(IL)

Summary

The DAT(IL) data base element contains one 32 bit integer data value. The data value is given a name and a valid flag.

By means of the call name DAT(IL) the Engineering Station will create 1 data base element of type IntegerLong Data.



Terminal Description

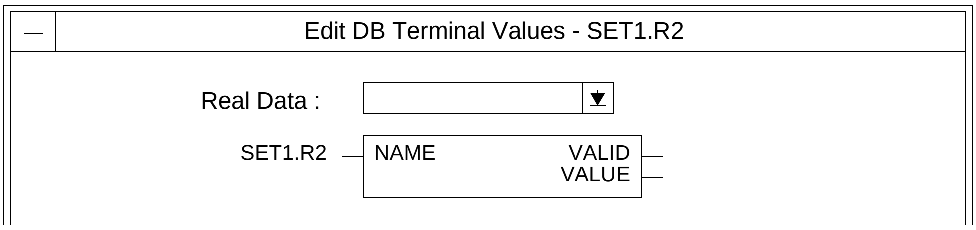
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	*	–	Unique element **NAME**. Default name from superior Data Set element. When created independently default name is DATx.	Max. 20 characters. Example if DSP is named SET1: SET1.IL1
VALID	PC	0	B(r/w)	**VALID** flag. Can be set by PC element (or MMI).	–
VALUE	system	–	IL(r/w)	**VALUE** of type IntegerLong.	–

Real Data DAT(R)

Summary

The DAT(R) data base element holds one real data value. The data value is given a name and a valid flag.

By means of the call name DAT(R) the Engineering Station will create 1 data base element of type Real Data.



Terminal Description

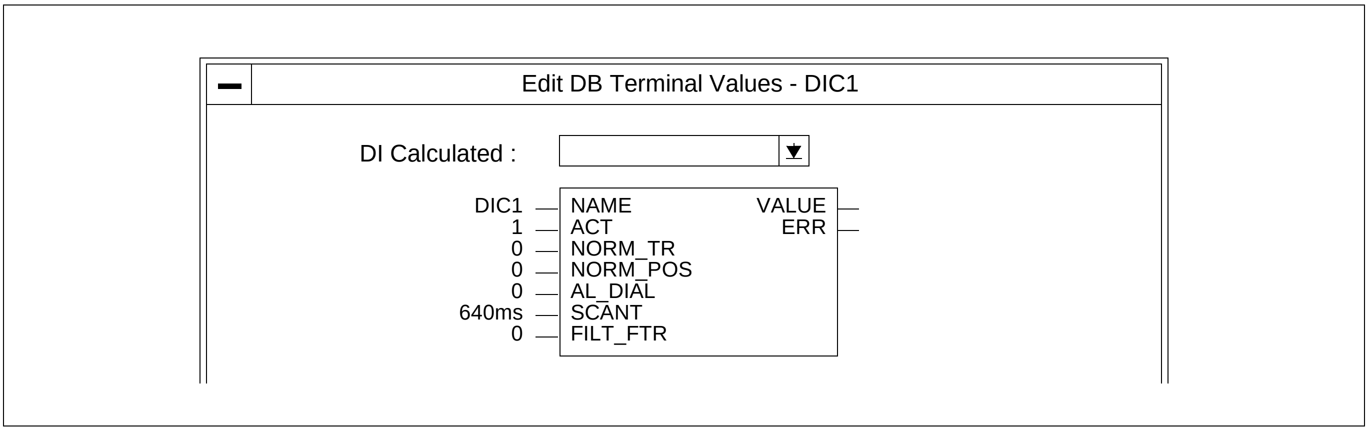
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	*	–	Unique element **NAME**. Default name from superior Data Set element. When created independently default name is DATx.	Max. 20 characters. Example if DSP is named SET1: SET1.R1
VALID	PC	0	B(r/w)	**VALID** flag. Can be set by PC element (or MMI).	–
VALUE	system	–	R(r/w)	**VALUE** of type Real.	–

DI Calculated DIC

Summary

The DI Calculated element is an event channel element used for detection of calculated digital events.

An event is detected when the boolean value (terminal VALUE) changes from 0 to 1 or vice versa, and event generation is deblocked (terminal NORM_TR=1). There is a filtering facility to suppress event generation in case of rapidly changing values.



Edit DB Terminal Values - DIC1

DI Calculated :

```
 DIC1 — NAME          VALUE —
    1 — ACT             ERR —
    0 — NORM_TR
    0 — NORM_POS
    0 — AL_DIAL
640ms — SCANT
    0 — FILT_FTR
```

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	DICx	–	Unique **NAME** of the event channel.	Max. 20 characters.
ACT	user	1	–	Element is: 0=not **ACT**ive 1=**ACT**ive	Element must be referenced by an EVS(S) when ACT=1.
NORM_TR	user/PC	0	B(r/w)	**NORM**al **TR**eatment. 0=event detection disabled 1=event detection enabled	Not allowed to change on-line.
NORM_POS	user	0	–	**NORM**al **POS**ition for this channel.	–
AL_DIAL	user	0	–	**DIAL** the master on **AL**arm. 0= no dial on alarm 1=dial on alarm	RCOM only.
SCANT	user	640ms	–	**SCAN T**ime for event detection. Values: 10ms, 20ms, 40ms, 80ms, 160ms, 320ms, 640ms, 1280ms, 2560ms, 5120ms, 10240ms, 20480ms, 40960ms, 81920ms, 163840ms, 327680ms	–

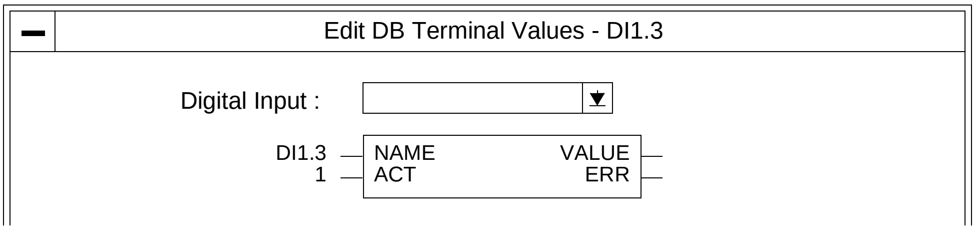
Terminal Description (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
FILT_FTR	user	0	–	**FILT**er time **F**ac**T**o**R**. The filter time = FILT_FTR × SCANT is the duration of a value change before the change is accepted as event.	0..32
VALUE	PC	0	B(r/w)	Signal **VALUE** (is watched for events).	–
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–

Digital Input DIS473, DIS475, DIS481, DIS482

Summary

DIS473, DIS475, DIS481 and DIS482 represent digital input signals of an Advant Controller 55. DIS473 and DIS475 are subordinated to CX473 resp. CX475, whereas DIS481 and DIS482 are subordinated to CT481 resp. CT482.



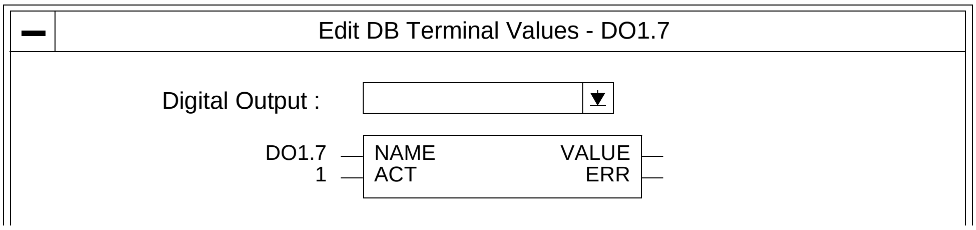
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	DIx.y	–	Unique signal **NAME**.	Max. 20 characters.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
VALUE	system	–	B(r)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware erro**r**	–

Digital Output DOS473, DOS475, DOS481, DOS482

Summary

DOS473, DOS475, DOS481, and DOS482 represent digital output signals of an Advant Controller 55. DOS473 and DOS475 are subordinated to CX473 resp. CX475, whereas DOS481 and DOS482 are subordinated to CT481 resp. CT482.



Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	DOx.y	–	Unique signal **NAME**.	Max. 20 characters.
ACT	user	1	–	Signal is: 0=spare 1=**ACT**ive	–
VALUE	system	–	B(r/w)	Process **VALUE**.	–
ERR	system	–	B(r)	**ERR**or flag. 0=no error 1=hardware error.	–

Event Set (Send) EVS(S)

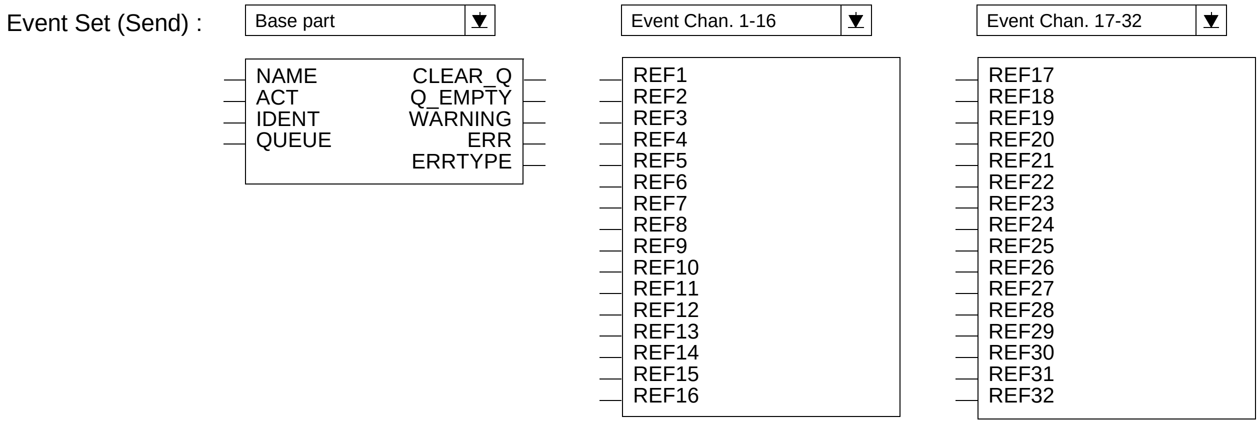
Summary

Event Set (EVS) elements are used for transport of time-tagged events from Advant Controller 55 to Advant Controller 400 Series. An Event Set element groups a set of Event Channels for sending or receiving of events.

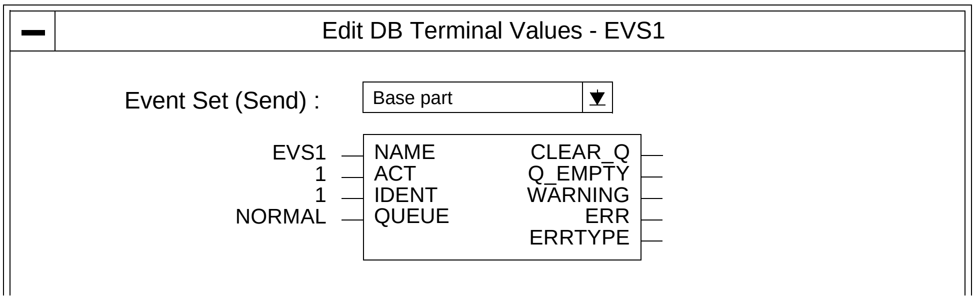
The Event Set (Send) element collects events from referenced Event Channel elements and sends them to the event receiver when requested.

The maximum number of Event Set elements is restricted to 16 per Advant Controller 55 station. An Event Channel element (AIC, DIC) may not be referenced by different EVS(S) elements.

Overview



Base part

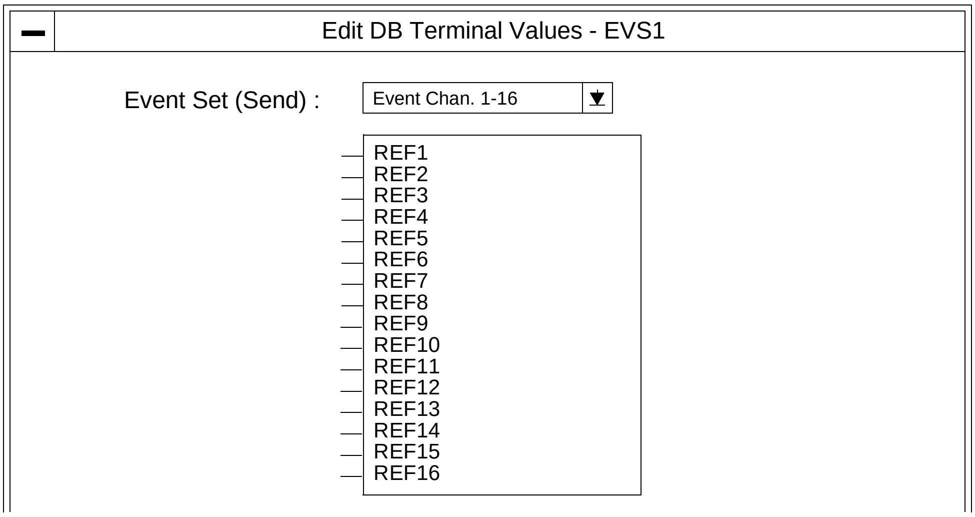


EVS1 — NAME
1 — ACT
1 — IDENT
NORMAL — QUEUE

Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	EVSx	–	Unique **NAME** of the Event Set.	Max. 20 characters.
ACT	user	1	–	The element is: 0=not **ACT**ive 1=**ACT**ive	–
IDENT	user	1	–	**IDENT**ifies the Event Set element in the node.	1..65535 Not allowed to change on-line.
QUEUE	user	NORMAL	–	Specifies the size of the event **QUEUE**. Values: NORMAL (100 entries), EXTENDED (500 entries)	Not allowed to change on-line.
CLEAR_Q	system	–	B(r/w)	**CLEAR** event **Q**ueue. 0=no action 1=clear event queue	–
Q_EMPTY	system	–	B(r)	Flag indicating: 0=Event **Q**ueue is not **EMPTY** 1=Event **Q**ueue is **EMPTY**	–
WARNING	system	–	B(r)	**WARNING** flag indicating non-fatal errors.	–
ERR	system	–	B(r)	**ERR**or flag indicating fatal errors.	–
ERRTYPE	system	–	I(r)	Indicating **ERR**or **TYPE**.	See table.

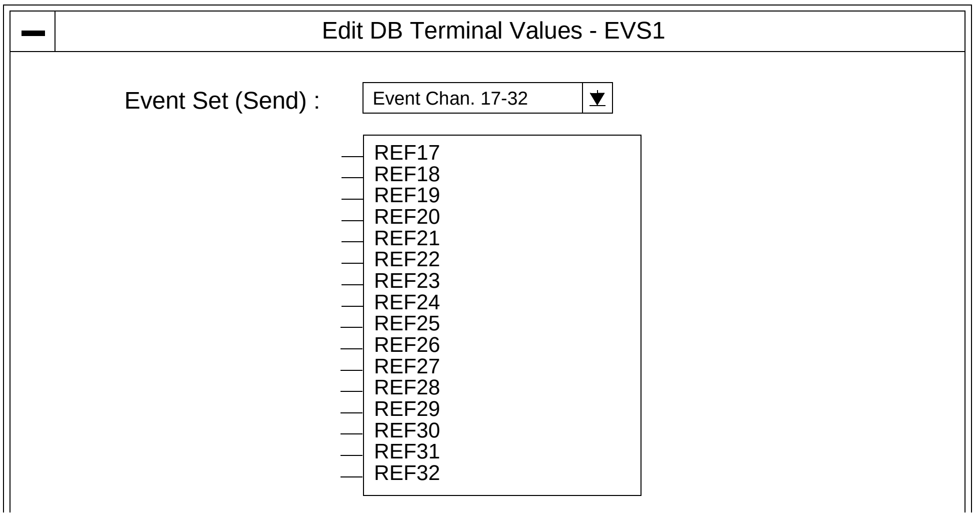
Event Chan. 1-16



Edit DB Terminal Values - EVS1

Event Set (Send) : Event Chan. 1-16

Event Chan. 17-32



Edit DB Terminal Values - EVS1

Event Set (Send) : Event Chan. 17-32

REF17
REF18
REF19
REF20
REF21
REF22
REF23
REF24
REF25
REF26
REF27
REF28
REF29
REF30
REF31
REF32

Terminal Description, Event Chan. 1-32

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
REF1	user	*	–	**REF**erence: Name of an Event Channel element.	(1)
REF2	user	*	–	**REF**erence: Name of an Event Channel element.	(1)
: : REF32	user	*	–	**REF**erence: Name of an Event Channel element.	(1)

(1) The REF1 to REF16 terminals are used to fill in the references to the event channels. References can be made to the DIC, AIC elements generating events.

Bit values of Terminal ERRTYPE

Bit	Description	Value of ERR, WARNING
0	Communication disturbed to at least one event source	WARNING=1
1	Communication disturbed to at least one event target	WARNING=1
2	Event source error	ERR=1
3	Event target error	ERR=1
4	Event queue filled to 80% or more for one or more event targets	ERR=1
5	Event queue overflow for one or more targets	ERR=1

MVI Data Block MVB

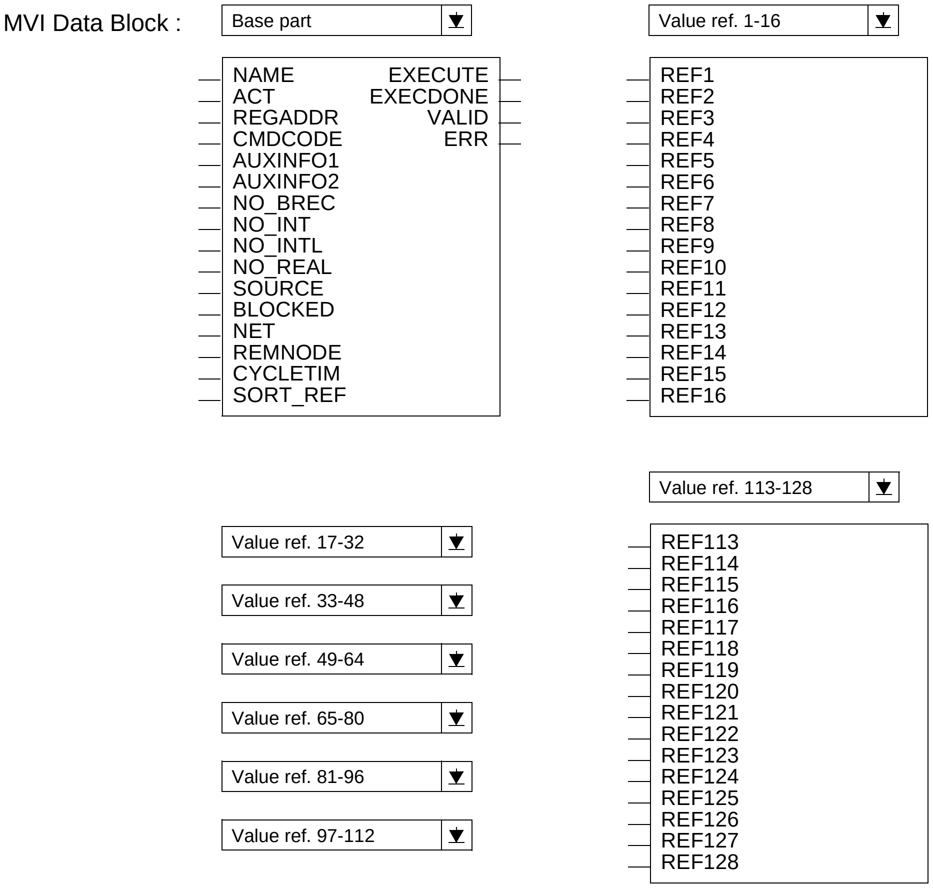
Summary

The MVI Data Block element specifies one MVI Data Block. It configures either data transmission or commands for the MVI protocol handler (in our case the RCOM protocol handler).

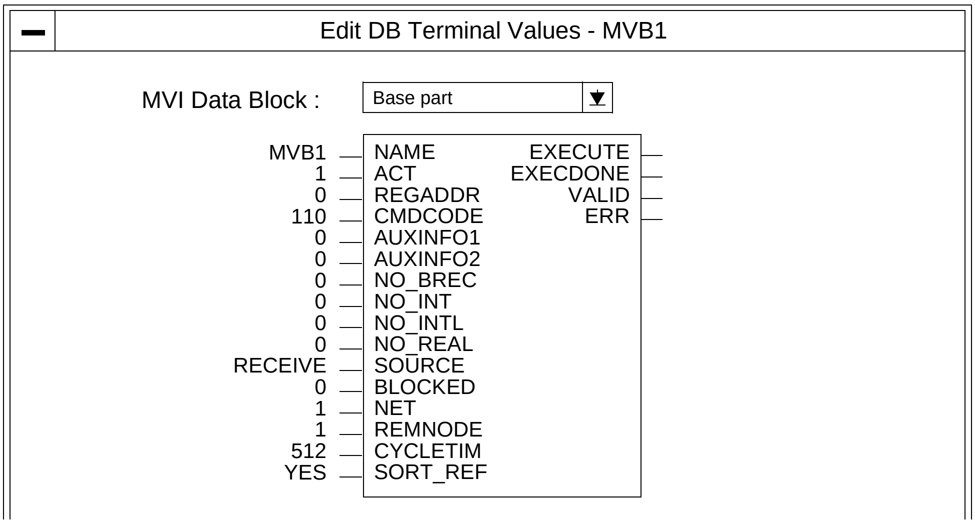
An MVI Data Block is a collection of up to 128 DAT's of any type. For RCOM only 8 DAT's and for RCOM+ only 24 DAT's are used.

The creation of a MVI Data Block element by the Engineering Station implies the automatic creation of the needed DAT elements.

Overview



Base part



Edit DB Terminal Values - MVB1

MVI Data Block : Base part

Value	Input terminal	Output terminal
MVB1	NAME	EXECUTE
1	ACT	EXECDONE
0	REGADDR	VALID
110	CMDCODE	ERR
0	AUXINFO1	
0	AUXINFO2	
0	NO_BREC	
0	NO_INT	
0	NO_INTL	
0	NO_REAL	
RECEIVE	SOURCE	
0	BLOCKED	
1	NET	
1	REMNODE	
512	CYCLETIM	
YES	SORT_REF	

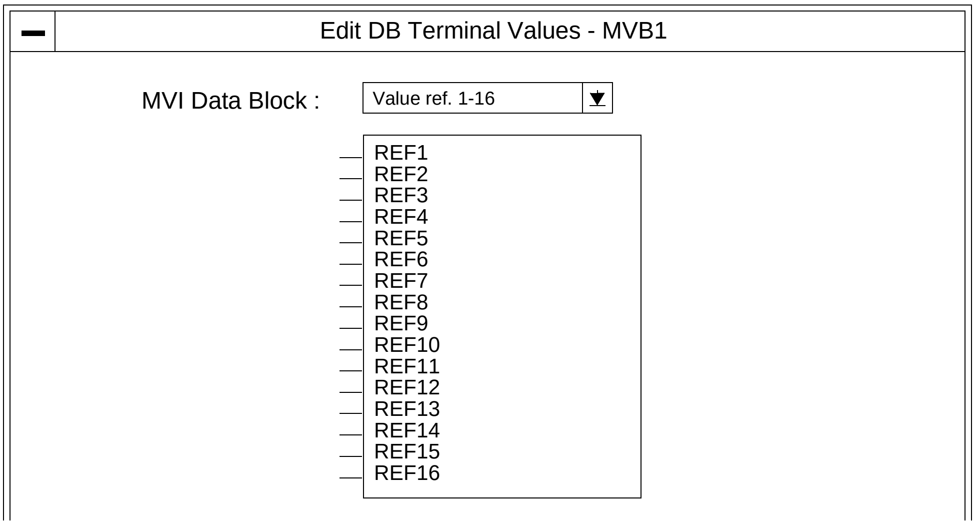
Terminal Description, Base part

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	MVBx	–	Unique module **NAME**.	Max. 12 characters.
ACT	user	1	–	The element is: 0=spare 1=**ACT**ive	–
REGADDR	user	0	–	**REG**ister start **ADDR**ess in external PLC/RTU. In RCOM: MVB identifier.	1..240
CMDCODE	user	110	–	**C**o**M**mand **CODE** to be executed by the MVI protocol handler, protocol dependent.	1..500 (see table).
AUXINFO1	user	0	–	**AUX**iliary **INFO**rmation **1**, protocol dependent.	–
AUXINFO2	user	0	–	**AUX**iliary **INFO**rmation **2**, protocol dependent.	–
NO_BREC	user	0	–	**N**umber of **B**oolean **REC**ords DAT(B).	0..128
NO_INT	user	0	–	**N**umber of **INT**eger records DAT(I).	0..128
NO_INTL	user	0	–	**N**umber of **INT**eger**L**ong records DAT(IL).	0..128
NO_REAL	user	0	–	**N**umber of **REAL** records DAT(R).	0..128
SOURCE	user	RECEIVE	–	**SOURCE**. Defines the direction of the data transmission. Values: RECEIVE, SEND	–

Terminal Description, Base part (Continued)

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
BLOCKED	user/PC	0	B(r/w)	Cyclic data transmission. 0=not **BLOCKED** 1=**BLOCKED**	Not allowed to change on-line.
NET	user	1	–	MVI **NET**work number used for Data Block transmission.	1..9
REMNODE	user	1	–	**REM**ote **NODE** number. In master mode: node no. of slave In slave mode: node no. of master	1..255
CYCLETIM	user	512	–	Defines the **CYCLE TIM**e of the protocol command execution in multiples of 100 milliseconds. Values: 0 (no cyclic execution), 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 16384, 32768	–
SORT_REF	user	YES	–	**SORT REF**erences. Values: NO=references not sorted YES=references sorted in the order B, I, IL, R.	–
EXECUTE	system	–	B(r/w)	**EXECUTE** invokes single execution of the specified protocol handler command when changing from 0 to 1.	–
EXECDONE	system	–	B(r)	**EXECDONE** indicates that the single execution invoked by EXECUTE was done.	–
VALID	system	–	B(r/w)	Boolean **VAL**ue (**ID**entity) for handshaking between MVI and PC program. • Receiving MVB: 0=MVB has not been received within 3×CYCLETIM 1=MVB has been updated • Sending MVB: 0=MVB has not been sent 1=MVB has been sent	–
ERR	system	–	B(r)	**ERR**or flag.	–

Value ref. 1-16



Edit DB Terminal Values - MVB1

MVI Data Block : Value ref. 1-16

REF1
REF2
REF3
REF4
REF5
REF6
REF7
REF8
REF9
REF10
REF11
REF12
REF13
REF14
REF15
REF16

Value ref. 17-32, Value ref. 33-48, Value ref. 49-64, Value ref. 65-80, Value ref. 81-96, Value ref. 97-112, Value ref. 113-128

The value references 17-128 are analogous to Value ref. 1-16.

Terminal Description, Value ref. 1-128

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
REF1	user	*	–	**REF**erence: Name of a DAT element.	–
REF2	user	*	–	**REF**erence: Name of a DAT element.	–
: REF128	user	*	–	**REF**erence: Name of a DAT element.	–

List of Command Codes for RCOM

CMDCODE	Move Block		Command Description
	MASTER=0	MASTER=1	
3	–	3CC	Dial-up
4	–	3CC	Hang-up
110	3D4	3C8	Read
210	3D0	3C4	Write
301	–	3CC	Cold start
302	–	3CC	Warm start
305	–	3CC	Normalization
308	–	3CC	Clock setting

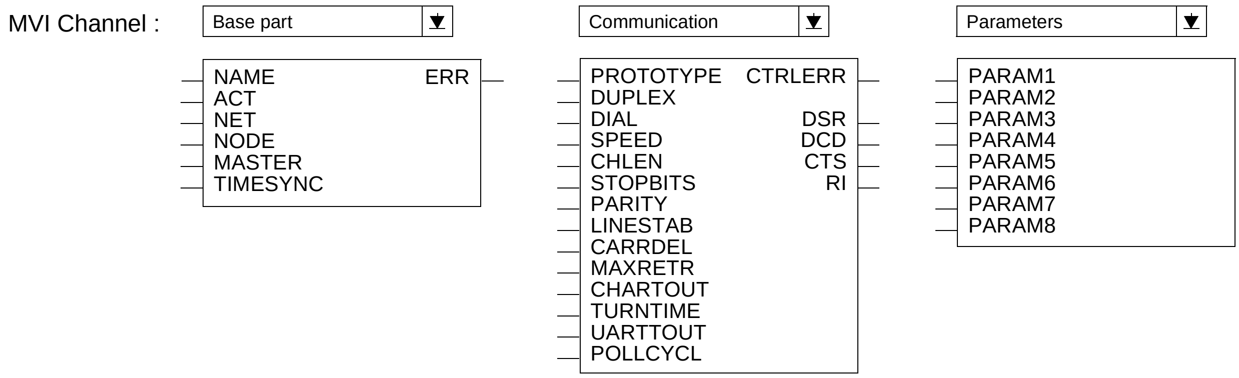
MVI Channel MVICHAN

Summary

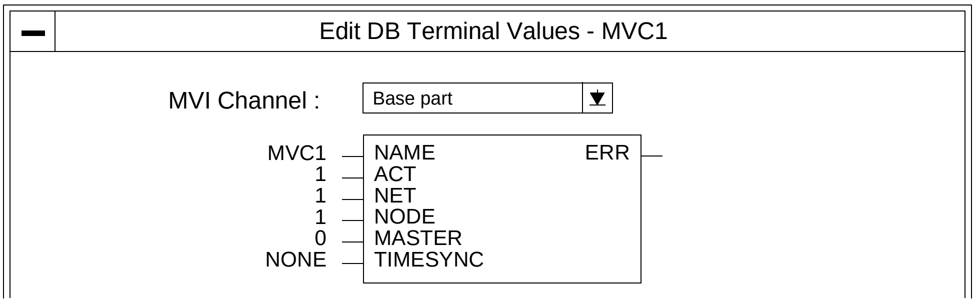
The MVI Channel element specifies the configuration of an MVI Channel.

An MVI channel can consist of up to 25 nodes configured with data base element type MVI Node.

Overview



Base part


Edit DB Terminal Values - MVC1

MVI Channel : Base part

MVC1 — NAME
1 — ACT
1 — NET
1 — NODE
0 — MASTER
NONE — TIMESYNC
ERR —

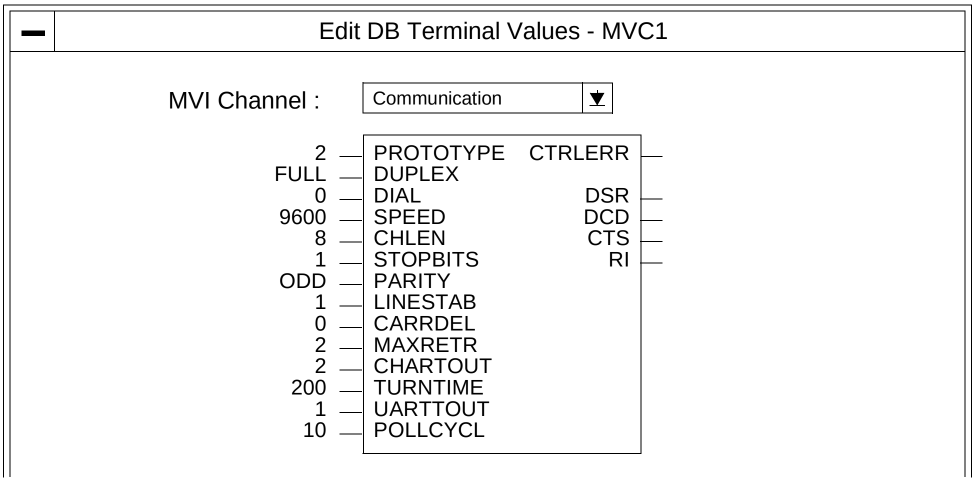
Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MVCx	–	Unique element **NAME**.	Max. 20 characters
ACT	user	1	–	Element is: 0=spare 1=**ACT**ive	–

Terminal Description, Base part (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NET	user	1	–	**NET**work number of MVI channel.	1..9 Not allowed to change on-line.
NODE	user	1	–	Own **NODE** number of MVI channel.	1..254 Not allowed to change on-line.
MASTER	user	0	–	MVI channel in: 0=slave mode 1=**MASTER** mode	Not allowed to change on-line.
TIMESYNC	user	NONE	–	**TIME SYNC**hronization. Values: NONE, MASTER, SLAVE	–
ERR	system	–	B(r)	**ERR**or flag.	–

Communication



Edit DB Terminal Values - MVC1

MVI Channel : Communication

```
       2 — PROTOTYPE   CTRLERR —
    FULL — DUPLEX
       0 — DIAL            DSR —
    9600 — SPEED           DCD —
       8 — CHLEN           CTS —
       1 — STOPBITS         RI —
     ODD — PARITY
       1 — LINESTAB
       0 — CARRDEL
       2 — MAXRETR
       2 — CHARTOUT
     200 — TURNTIME
       1 — UARTTOUT
      10 — POLLCYCL
```

Terminal Description, Communication

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
PROTTYPE	user	2	–	**PROT**ocol **TYPE** (ASCII, binary, checksum), 1=RCOM, 2=RCOM+	1..2

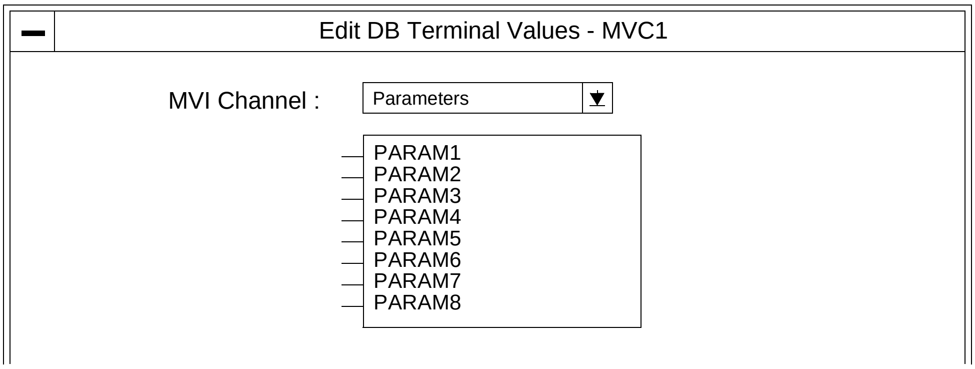
Terminal Description, Communication (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
DUPLEX	user	FULL	–	**DUPLEX** mode, concerns modem signals between MVI channel and modem. Values: FULL, HALF, HALF (DCD IGNORED)	–
DIAL	user	0	–	**DIAL**ing. 0=disabled (used for private line) 1=enabled (used for dial line)	–
SPEED	user	9600	–	Transmission **SPEED** of communication in bits/second. Values: 150, 300, 600, 1200, 2400, 4800, 9600	–
CHLEN	user	8	–	**CH**aracter **LEN**gth in bits. Values: 7, 8	–
STOPBITS	user	1	–	**STOP BITS**. Values: 1, 1.5, 2	–
PARITY	user	ODD	–	**PARITY**. Values: NONE, ODD, EVEN	–
LINESTAB	user	1	–	**LINE STAB**ilization time. Number of characters to allow the carrier wave to stabilize before transmission of the first character.	0..15
CARRDEL	user	0	–	**CARR**ier **DEL**ay. Number of characters to wait after transmission of the last character before deactivating RTS.	0..15
MAXRETR	user	2	–	**MAX**imum number of **RETR**ansmissions before line is considered broken.	0..20
CHARTOUT	user	2	–	**CHAR**acter **T**ime-**OUT**.	0..15
TURNTIME	user	200	–	**TURN** around **TIME** in milliseconds. Assumed time for telegram processing in slave mode depending only on system load. Total time to wait for response is: TURNTIME + time for telegram transmission.	10..20000 in steps of 10.
UARTTOUT	user	1	–	**UART** transmission **T**ime-**OUT**. Maximum number of characters for the controller to wait for a DCD before aborting the transmission (only used if DUPLEX=HALF).	0..15
POLLCYCL	user	10	–	Maximum time between two **POLL**ing **CYCL**es in seconds.	0..255
CTRLERR	system	–	B(r)	Indicating any (**C**on**TR**o**L**) **ERR**or in the modem interface.	–
DSR	system	–	B(r)	Modem signal **D**ata **S**et **R**eady.	–
DCD	system	–	B(r)	Modem signal **D**ata **C**arrier **D**etect.	–

Terminal Description, Communication (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
CTS	system	–	B(r)	Modem signal **C**lear **T**o **S**end.	–
RI	system	–	B(r)	Modem signal **R**ing **I**ndicator.	–

Parameters



Terminal Description, Parameters

Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
PARAM1	user	1	–	Protocol **PARAM**eter **1**. RCOM: number of preambles.	1..max. IL
PARAM2	user	0	–	Protocol **PARAM**eter **2**. RCOM: Time in seconds before hang-up in case no data is transmitted. This time is also used for dial-up waiting for answer.	0..max. IL
PARAM3	user	0	–	Protocol **PARAM**eter **3**. RCOM: disconnect time.	0..max. IL
PARAM4	user	0	–	Protocol **PARAM**eter **4**. RCOM: max. number of polls per polling cycle.	-1..max. IL

Terminal Description, Parameters (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
PARAM5	user	0	–	Protocol **PARAM**eter **5**. RCOM: Clock setting mode (used only in master mode). 0=clock synchronization only on execute command from application (clock sync. command). 1=cyclic clock synchronization (only for private lines). 2=cyclic clock synchronization and after restart of a slave node (only for private lines). 3=clock synchronization after connection of a dial-up line. 4=clock synchronization before hang-up of a dial-up line.	0..4
PARAM6	user	0	–	Protocol **PARAM**eter **6**. RCOM: – Master mode: In case of clock setting modes (PARAM5) 1 and 2: cycle time of clock setting. – Slave mode: Interval between time synchronizations from master.	0..max. IL
PARAM7	user	0	–	Protocol **PARAM**eter **7**. RCOM: Maximum number of recalls before trying next phone number.	0..max. IL
PARAM8	user	0	–	Protocol **PARAM**eter **8**. RCOM: Poll data reception time-out time in seconds (only for MASTER=1).	0..max. IL

MVI Node MVINODE

Summary

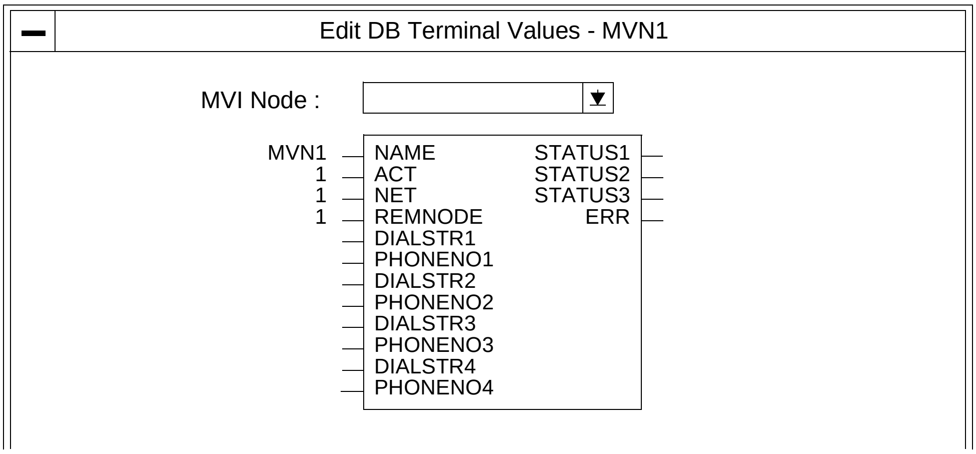
Each node included in a MVI network link is represented by a data base element of type MVI Node.

The element MVI Node specifies:

1. In master mode
- One slave node connected to the MVI channel
- The status words 1-3 for this slave node
- One phone number and one dial string for this slave node

2. In slave mode
- The own status in status word 1
- Up to 4 phone numbers and dial strings for the master

The phone numbers are used only if master and slave nodes are connected via dial line. The master phone number in the slave node is used to dial the master in case of alarm. For redundancy reasons up to 4 numbers can be given.



Edit DB Terminal Values - MVN1

MVI Node :

```
MVN1 — NAME        STATUS1 —
   1 — ACT         STATUS2 —
   1 — NET         STATUS3 —
   1 — REMNODE         ERR —
     — DIALSTR1
     — PHONENO1
     — DIALSTR2
     — PHONENO2
     — DIALSTR3
     — PHONENO3
     — DIALSTR4
     — PHONENO4
```

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	MVNx	–	Unique element **NAME**.	Max. 20 characters.
ACT	user	1	–	Element is: 0=spare 1=**ACT**ive	–

Terminal Description (Continued)

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NET	user	1	–	MVI **NET**work number.	Not allowed to change on-line.
REMNODE	user	1	–	**REM**ote **NODE** number. In master node: node no. of slave. In slave node: node no. of master.	1..254
DIALSTR1	user		–	**DIAL STRi**ng **1** for modem.	Max. 20 characters.
PHONENO1	user		–	**PHONE N**umber **1** for MVI master/slave including area number.	Max. 20 characters.
DIALSTR2	user		–	**DIAL STRi**ng **2** for modem.	Max. 20 characters.
PHONENO2	user		–	**PHONE N**umber **2** for MVI master/slave including area number.	Max. 20 characters.
DIALSTR3	user		–	**DIAL STRi**ng **3** for modem.	Max. 20 characters.
PHONENO3	user		–	**PHONE N**umber **3** for MVI master/slave including area number.	Max. 20 characters.
DIALSTR4	user		–	**DIAL STRi**ng **4** for modem.	Max. 20 characters.
PHONENO4	user		–	**PHONE N**umber **4** for MVI master/slave including area number.	Max. 20 characters.
STATUS1	system	–	IL(r)	MVI **STATUS** word **1**.	–
STATUS2	system	–	IL(r)	MVI **STATUS** word **2**.	–
STATUS3	system	–	IL(r)	MVI **STATUS** word **3**.	–
ERR	system	–	B(r)	**ERR**or flag.	–

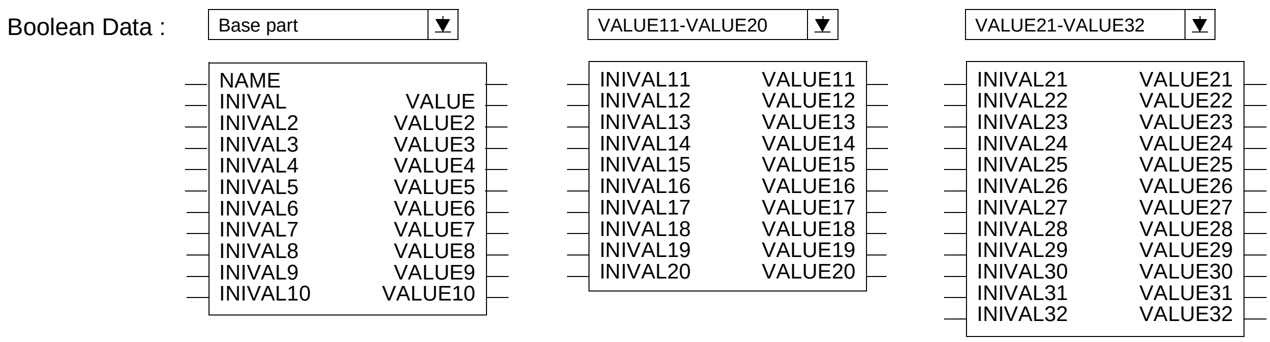
Boolean Param PARDAT(B)

Summary

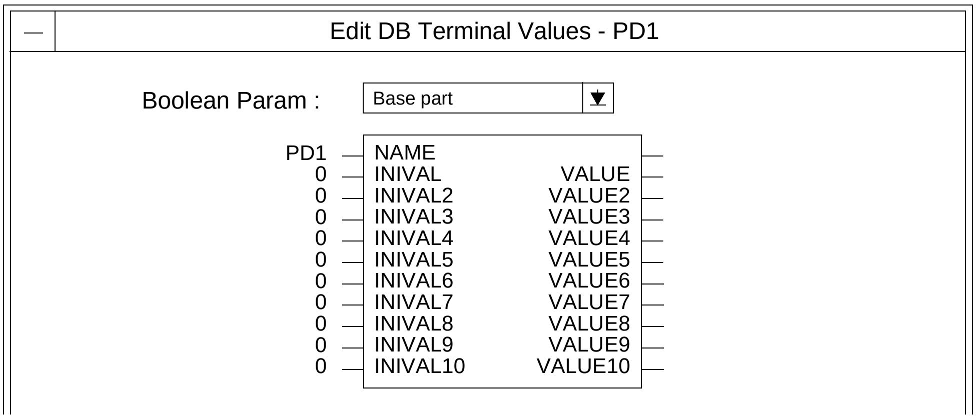
The PARDAT(B) data base element holds 32 packed boolean data values. Each data value is given an initial value. A name is given for the complete element.

By means of the call name PARDAT(B) the Engineering Station will create 1 data base element of type Boolean Param.

Overview



Base part



Edit DB Terminal Values - PD1

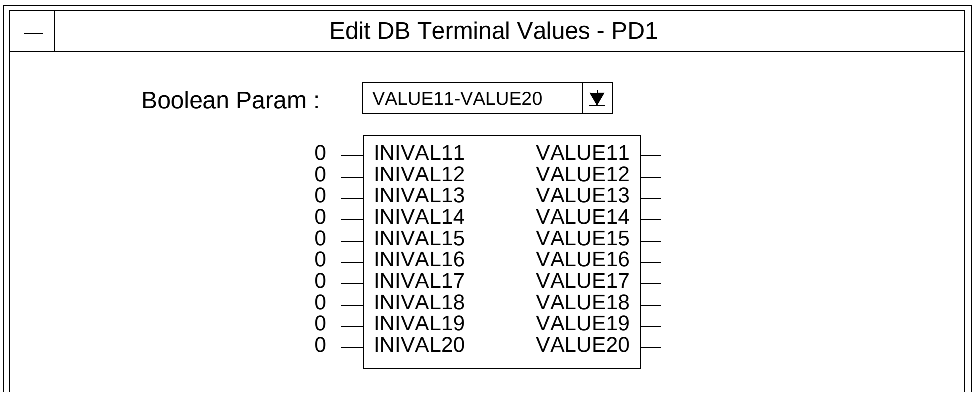
Boolean Param : Base part

PD1	NAME	
0	INIVAL	VALUE
0	INIVAL2	VALUE2
0	INIVAL3	VALUE3
0	INIVAL4	VALUE4
0	INIVAL5	VALUE5
0	INIVAL6	VALUE6
0	INIVAL7	VALUE7
0	INIVAL8	VALUE8
0	INIVAL9	VALUE9
0	INIVAL10	VALUE10

Terminal Description, Base part

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
INIVAL	user	0	–	**INI**tial **VAL**ue.	–
VALUE	system	–	B(r/w)	Boolean **VALUE**.	–
INIVAL2	user	0	–	**INI**tial **VAL**ue.	–
VALUE2	system	–	B(r/w)	Boolean **VALUE**.	–
: : INIVAL10	user	0	–	**INI**tial **VAL**ue.	–
VALUE10	system	–	B(r/w)	Boolean **VALUE**.	–

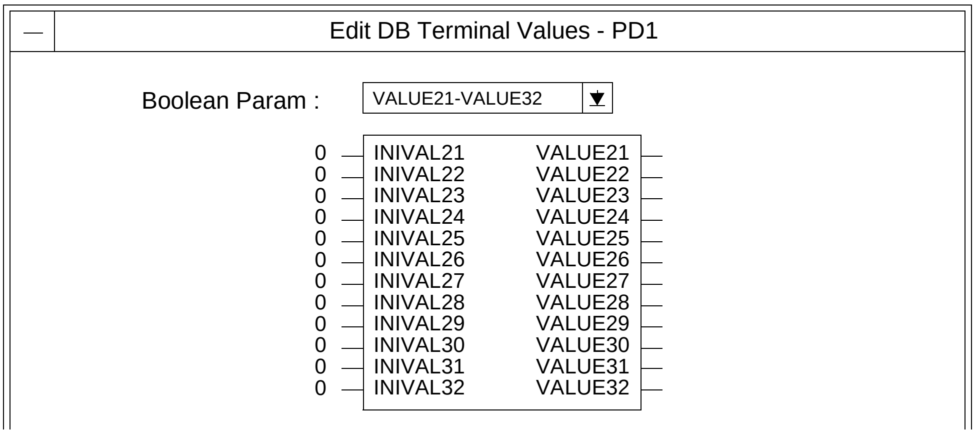
VALUE11-VALUE20



Boolean Param : VALUE11-VALUE20

0	INIVAL11	VALUE11
0	INIVAL12	VALUE12
0	INIVAL13	VALUE13
0	INIVAL14	VALUE14
0	INIVAL15	VALUE15
0	INIVAL16	VALUE16
0	INIVAL17	VALUE17
0	INIVAL18	VALUE18
0	INIVAL19	VALUE19
0	INIVAL20	VALUE20

VALUE21-VALUE32



Boolean Param : VALUE21-VALUE32

```
0 — INIVAL21     VALUE21 —
0 — INIVAL22     VALUE22 —
0 — INIVAL23     VALUE23 —
0 — INIVAL24     VALUE24 —
0 — INIVAL25     VALUE25 —
0 — INIVAL26     VALUE26 —
0 — INIVAL27     VALUE27 —
0 — INIVAL28     VALUE28 —
0 — INIVAL29     VALUE29 —
0 — INIVAL30     VALUE30 —
0 — INIVAL31     VALUE31 —
0 — INIVAL32     VALUE32 —
```

Terminal Description, VALUE11-32

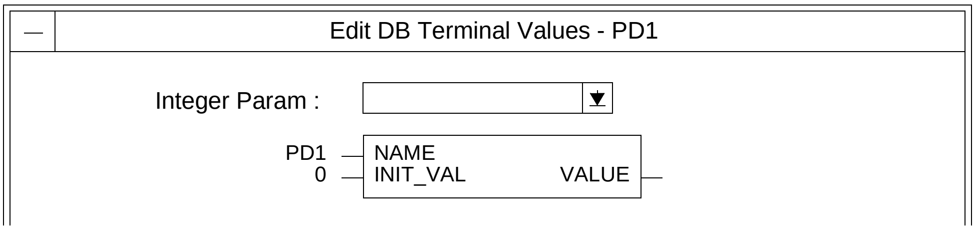
Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
INIVAL11	user	0	–	**INI**tial **VAL**ue.	–
VALUE11	system	–	B(r/w)	Boolean **VALUE**.	–
INIVAL12	user	0	–	**INI**tial **VAL**ue.	–
VALUE12	system	–	B(r/w)	Boolean **VALUE**.	–
: : INIVAL32	user	0	–	**INI**tial **VAL**ue.	–
VALUE32	system	–	B(r/w)	Boolean **VALUE**.	–

Integer Param PARDAT(I)

Summary

The PARDAT(I) data base element holds one 16 bit integer data value. The data value is given a name and an initial value.

By means of the call name PARDAT(I) the Engineering Station will create 1 data base element of type Integer Param.



Edit DB Terminal Values - PD1

Integer Param :

PD1 — NAME
0 — INIT_VAL VALUE —

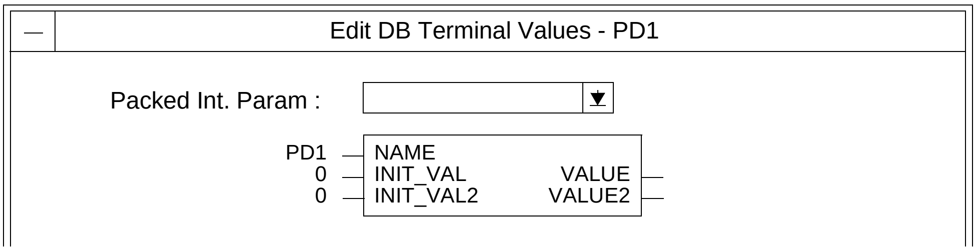
Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0	–	**INIT**ial **VAL**ue.	–
VALUE	system	–	I(r/w)	**VALUE** of type Integer.	–

Packed Int. Param PARDAT(II)

Summary

The PARDAT(II) data base element holds two 16 bit integer data values. The data values are given a name and an initial value. By means of the call name PARDAT(II) the Engineering Station will create 1 data base element of type Packed Int. Param.



Terminal Description

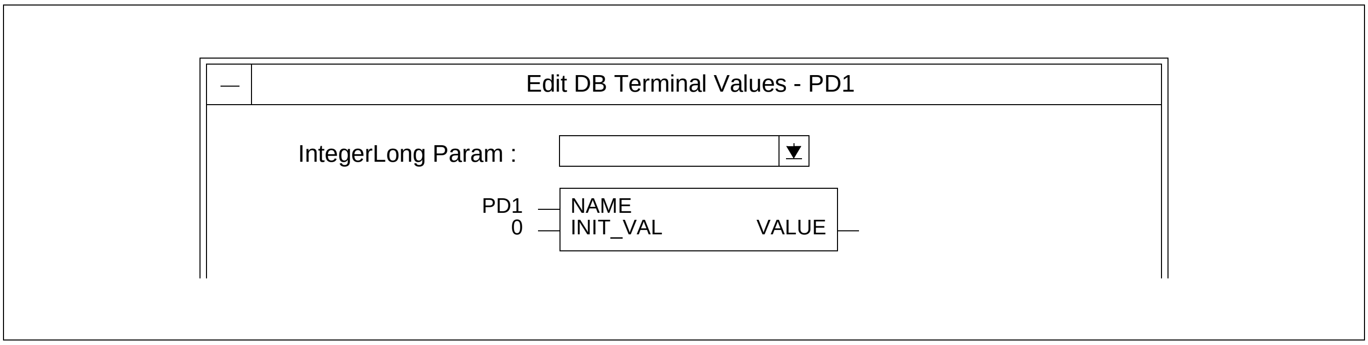
Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0	–	**INIT**ial **VAL**ue.	–
INIT_VAL2	user	0	–	**INIT**ial **VAL**ue **2**.	–
VALUE	system	–	I(r/w)	**VALUE** of type Integer.	–
VALUE2	system	–	I(r/w)	**VALUE 2** of type Integer.	–

IntegerLong Param PARDAT(IL)

Summary

The PARDAT(IL) data base element holds one 32 bit integer data value. The data value is given a name and an initial value.

By means of the call name PARDAT(IL) the Engineering Station will create 1 data base element of type IntegerLong Param.



Edit DB Terminal Values - PD1

IntegerLong Param :

PD1 — NAME
0 — INIT_VAL VALUE —

Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0	–	**INIT**ial **VAL**ue.	–
VALUE	system	–	IL(r/w)	**VALUE** of type IntegerLong.	–

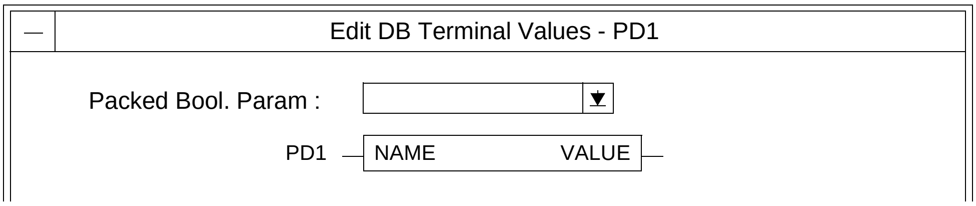
Packed Bool. Param PARDAT(NB)

Summary

The PARDAT(NB) data base element holds a data value representing 32 bit values.

By means of the call name PARDAT(NB) the Engineering Station will create:

- 1 data base element of type Packed Bool. Param.
- 32 data base elements of type Boolean Value.



Terminal Description

Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
VALUE	system	–	IL(r/w)	**VALUE** of type IntegerLong.	–

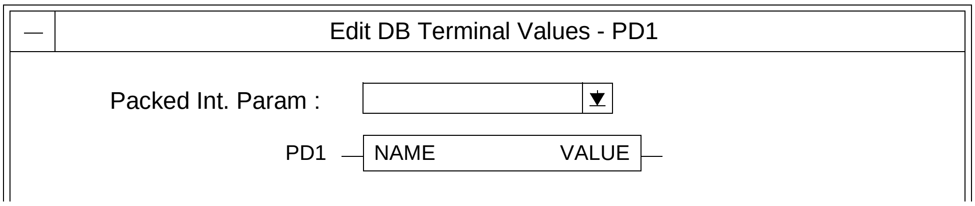
Packed Int. Param PARDAT(NI)

Summary

The PARDAT(NI) data base element holds a data value representing two 16 bit integer values.

By means of the call name PARDAT(NI) the Engineering Station will create:

- 1 data base element of type Packed Int. Param.
- 2 data base elements of type Integer Value.



Terminal Description

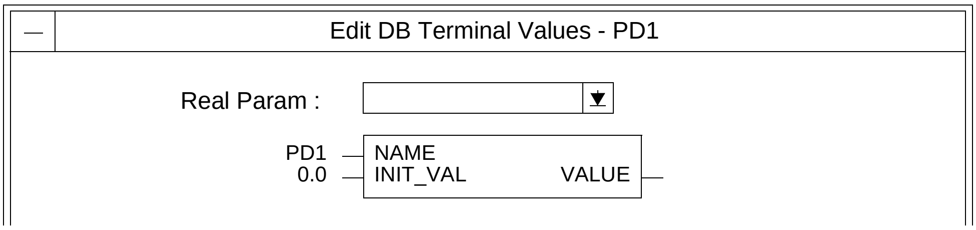
Terminal Name	**Value entered by**	**Default value**	**PC con-nection data type**	**Description**	**Remarks**
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
VALUE	system	–	IL(r/w)	**VALUE** of type IntegerLong.	–

Real Param PARDAT(R)

Summary

The PARDAT(R) data base element holds one real data value. The data value is given a name and an initial value.

By means of the call name PARDAT(R) the Engineering Station will create 1 data base element of type Real Param.



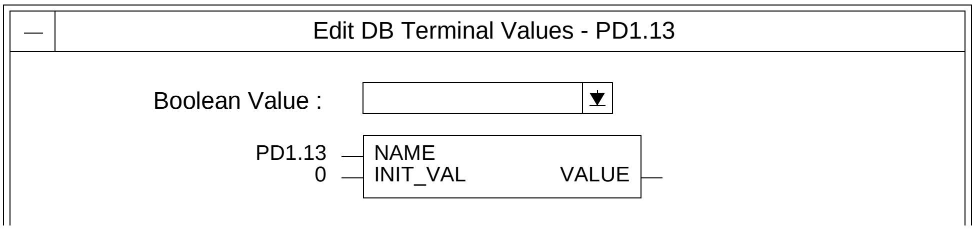
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0.0	–	**INIT**ial **VAL**ue.	–
VALUE	system	–	R(r/w)	**VALUE** of type Real.	–

Boolean Value PARDATS(NB)

Summary

The PARDATS(NB) data base element holds one boolean data value. It is subordinate to the PARDAT(NB) data base element.



Edit DB Terminal Values - PD1.13

Boolean Value :

PD1.13 — NAME
0 — INIT_VAL VALUE —

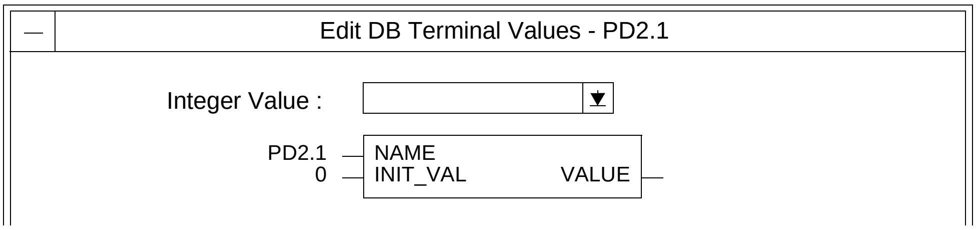
Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx.y	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0	–	**INIT**ial **VAL**ue.	–
VALUE	system	–	B(r/w)	**VALUE** of type Boolean.	–

Integer Value PARDATS(NI)

Summary

The PARDATS(NI) data base element holds one 16 bit integer data value. It is subordinate to the PARDAT(NI) data base element.



Terminal Description

Terminal Name	**Value entered by**	**Default value**	**PC connection data type**	**Description**	**Remarks**
NAME	user	PDx.y	–	Unique element **NAME**.	Max. 20 characters.
INIT_VAL	user	0	–	**INIT**ial **VAL**ue.	–
VALUE	system	–	B(r/w)	**VALUE** of type Integer.	–

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